

GW - _____ 028 _____

ENFORCEMENT

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, June 16, 2017 4:03 PM
To: 'Dade, Lewis (Randy)'; Griswold, Jim, EMNRD; Denton, Scott; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: RE: Discharge Permit GW-28 May 2017 Report

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and finds the Permittee to be in compliance.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

From: Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]
Sent: Wednesday, June 14, 2017 4:16 PM
To: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Denton, Scott <Scott.Denton@HollyFrontier.com>; McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>
Cc: Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: Discharge Permit GW-28 May 2017 Report

Please find attached the monthly GW-28 Discharge Permit Report for May 2017. . If there are any questions, please contact me. Thanks, Randy.

Dade, Lewis (RANDY)

HF Navajo Ref LLC

Environmental Specialist IV

Environmental - Artesia

(575) 746-5281 Work

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501 E. MAIN

ARTESIA, NM. 88210

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June 14, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – May 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's May 2017 monthly report, for the period of May 1-31, 2017, under the Permit.

Specifically, this report covers the May 2017 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical Report

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Name

Date June 14, 2017

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Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes and Analytical Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
5/1/2017	111.62	110.48	0.03	222.13	7,615.89
5/2/2017	112.23	111.39	0.02	223.64	7,667.66
5/3/2017	111.84	111.42	0.02	223.28	7,655.31
5/4/2017	111.61	110.46	0.02	222.09	7,614.51
5/5/2017	111.89	110.73	0.02	222.64	7,633.37
5/6/2017	111.75	110.96	0.02	222.73	7,636.46
5/7/2017	109.40	113.43	0.02	222.85	7,640.57
5/8/2017	107.81	122.85	0.02	230.68	7,909.03
5/9/2017	110.51	124.63	0.02	235.16	8,062.63
5/10/2017	110.02	125.52	0.02	235.56	8,076.34
5/11/2017	109.43	125.18	0.02	234.63	8,044.46
5/12/2017	107.85	119.40	0.02	227.27	7,792.11
5/13/2017	107.56	120.98	0.11	228.65	7,839.43
5/14/2017	108.61	124.94	0.02	233.57	8,008.11
5/15/2017	109.03	125.98	0.02	235.03	8,058.17
5/16/2017	109.67	127.95	0.01	237.63	8,147.31
5/17/2017	109.74	128.86	0.02	238.62	8,181.26
5/18/2017	109.45	129.05	0.02	238.52	8,177.83
5/19/2017	109.26	128.80	0.02	238.08	8,162.74
5/20/2017	109.43	127.47	0.02	236.92	8,122.97
5/21/2017	109.68	127.41	0.02	237.11	8,129.49
5/22/2017	109.42	127.58	0.02	237.02	8,126.40
5/23/2017	109.55	127.15	0.03	236.73	8,116.46
5/24/2017	110.64	128.13	0.03	238.80	8,187.43
5/25/2017	69.39	124.85	49.31	243.55	8,350.29
5/26/2017	0.02	123.64	127.82	251.48	8,622.17
5/27/2017	50.91	80.20	126.53	257.64	8,833.37
5/28/2017	132.88	11.18	124.89	268.95	9,221.14
5/29/2017	115.01	14.88	124.79	254.68	8,731.89
5/30/2017	142.42	7.41	124.41	274.24	9,402.51
5/31/2017	142.50	7.86	125.13	275.49	9,445.37
TOTAL (bbbls/month)					243,767.31

Attachment 2
Analytical Lab Report



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

June 01, 2017

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly RO Reject

OrderNo.: 1705790

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/16/2017 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued May 31, 2017.

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 1705790

Date Reported: 6/1/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly RO Reject

Collection Date: 5/12/2017 3:37:00 PM

Lab ID: 1705790-001

Matrix: AQUEOUS

Received Date: 5/16/2017 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	5/16/2017 6:09:12 PM	C42837
Lead	ND	0.00050		mg/L	1	5/16/2017 6:06:09 PM	C42837
Selenium	0.012	0.0010		mg/L	1	5/16/2017 6:06:09 PM	C42837
Uranium	0.0090	0.00050		mg/L	1	5/16/2017 6:06:09 PM	C42837
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.9	0.50		mg/L	5	5/17/2017 5:01:13 AM	A42849
Chloride	520	50		mg/L	100	5/20/2017 2:28:45 AM	R42953
Sulfate	2300	50		mg/L	100	5/20/2017 2:28:45 AM	R42953
Nitrate+Nitrite as N	2.3	1.0		mg/L	5	5/20/2017 2:53:34 AM	R42953
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	5200	100	*D	mg/L	1	5/17/2017 5:54:00 PM	31769
SM4500-H+B: PH							Analyst: JRR
pH	7.94		H	pH units	1	5/16/2017 8:35:08 PM	R42863
EPA METHOD 200.7: DISSOLVED METALS							Analyst: pmf
Aluminum	ND	0.020		mg/L	1	5/22/2017 2:56:28 PM	B42951
Barium	0.094	0.0020		mg/L	1	5/22/2017 2:56:28 PM	B42951
Boron	0.10	0.040		mg/L	1	5/22/2017 2:56:28 PM	B42951
Cadmium	ND	0.0020		mg/L	1	5/22/2017 2:56:28 PM	B42951
Chromium	ND	0.0060		mg/L	1	5/22/2017 2:56:28 PM	B42951
Cobalt	ND	0.0060		mg/L	1	5/22/2017 2:56:28 PM	B42951
Copper	ND	0.0060		mg/L	1	5/22/2017 2:56:28 PM	B42951
Iron	ND	0.020		mg/L	1	5/22/2017 2:56:28 PM	B42951
Manganese	ND	0.0020		mg/L	1	5/22/2017 2:56:28 PM	B42951
Molybdenum	0.0098	0.0080		mg/L	1	5/22/2017 2:56:28 PM	B42951
Nickel	ND	0.010		mg/L	1	5/22/2017 2:56:28 PM	B42951
Silver	ND	0.0050		mg/L	1	5/22/2017 2:56:28 PM	B42951
Zinc	0.053	0.010		mg/L	1	5/22/2017 2:56:28 PM	B42951
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	5/26/2017 8:51:14 AM	31959
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	5/18/2017 4:08:40 PM	GW4290
Surr: BFB	103	70-130		%Rec	1	5/18/2017 4:08:40 PM	GW4290
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	5/23/2017 10:17:52 AM	31899
EPA METHOD 8082: PCB'S							Analyst: SCC

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1705790

Date Reported: 6/1/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly RO Reject

Collection Date: 5/12/2017 3:37:00 PM

Lab ID: 1705790-001

Matrix: AQUEOUS

Received Date: 5/16/2017 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Aroclor 1221	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Aroclor 1232	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Aroclor 1242	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Aroclor 1248	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Aroclor 1254	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Aroclor 1260	ND	1.0		µg/L	1	5/22/2017 2:01:00 PM	31784
Surr: Decachlorobiphenyl	58.0	50.4-123		%Rec	1	5/22/2017 2:01:00 PM	31784
Surr: Tetrachloro-m-xylene	61.6	41.2-147		%Rec	1	5/22/2017 2:01:00 PM	31784
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	5/22/2017 5:41:33 PM	31839
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	5/22/2017 5:41:33 PM	31839
Surr: DNOP	113	72.4-157		%Rec	1	5/22/2017 5:41:33 PM	31839
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	5/22/2017 10:13:00 AM	31785
1-Methylnaphthalene	ND	2.0		µg/L	1	5/22/2017 10:13:00 AM	31785
2-Methylnaphthalene	ND	2.0		µg/L	1	5/22/2017 10:13:00 AM	31785
Benzo(a)pyrene	ND	0.070		µg/L	1	5/22/2017 10:13:00 AM	31785
Surr: Benzo(e)pyrene	85.2	49.1-127		%Rec	1	5/22/2017 10:13:00 AM	31785
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Toluene	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Ethylbenzene	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Carbon Tetrachloride	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Chloroform	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,1-Dichloroethane	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,1-Dichloroethene	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Methylene Chloride	ND	3.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Vinyl chloride	ND	1.0		µg/L	1	5/16/2017 1:57:08 PM	W42829
Xylenes, Total	ND	1.5		µg/L	1	5/16/2017 1:57:08 PM	W42829
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	5/16/2017 1:57:08 PM	W42829

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1705790

Date Reported: 6/1/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly RO Reject

Collection Date: 5/12/2017 3:37:00 PM

Lab ID: 1705790-001

Matrix: AQUEOUS

Received Date: 5/16/2017 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	5/16/2017 1:57:08 PM	W42829
Surr: Dibromofluoromethane	100	70-130		%Rec	1	5/16/2017 1:57:08 PM	W42829
Surr: Toluene-d8	94.3	70-130		%Rec	1	5/16/2017 1:57:08 PM	W42829
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics	ND	2.5		µg/L	1	5/23/2017	31898

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1705790

Date Reported: 6/1/2017

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Quarterly RO Reject

Collection Date:

Lab ID: 1705790-002

Matrix: TRIP BLANK

Received Date: 5/16/2017 9:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	5/23/2017 11:04:18 AM	31899
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Toluene	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Ethylbenzene	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Carbon Tetrachloride	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Chloroform	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,1-Dichloroethane	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,1-Dichloroethene	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Methylene Chloride	ND	3.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Vinyl chloride	ND	1.0		µg/L	1	5/16/2017 2:25:39 PM	W42829
Xylenes, Total	ND	1.5		µg/L	1	5/16/2017 2:25:39 PM	W42829
Surr: 1,2-Dichloroethane-d4	94.7	70-130		%Rec	1	5/16/2017 2:25:39 PM	W42829
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	5/16/2017 2:25:39 PM	W42829
Surr: Dibromofluoromethane	101	70-130		%Rec	1	5/16/2017 2:25:39 PM	W42829
Surr: Toluene-d8	98.5	70-130		%Rec	1	5/16/2017 2:25:39 PM	W42829

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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

Anatek Labs, Inc.

1282 Alluras Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 170517031
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1705790
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number	170517031-001	Sampling Date	5/12/2017	Date/Time Received	5/17/2017 11:20 AM
Client Sample ID	1705790-001J / R.O REJECT	Sampling Time	3:37 PM		
Matrix	Water				
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	5/22/2017	JEK	EPA 335.4	

Authorized Signature



Todd Tarusclo, Lab Manager

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

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

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

Tuesday, May 30, 2017

Page 1 of 1

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 170517031
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1705790
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.528	mg/L	0.5	105.6	90-110	5/17/2017	5/22/2017

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
170511022-003	Cyanide	ND	0.481	mg/L	0.5	96.2	90-110	5/17/2017	5/22/2017

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	0.476	mg/L	0.5	95.2	1.0	0-20	5/17/2017	5/22/2017

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/L	0.01	5/17/2017	5/22/2017

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

Comments:

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1705790
Pace Project No.: 30219102

Sample: 1705790-0011 R.O. Reject Lab ID: 30219102001 Collected: 05/12/17 15:37 Received: 05/17/17 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.775 ± 0.650 (0.930) C:NA T:90%	pCi/L	05/22/17 19:30	13982-63-3	
Radium-228	EPA 904.0	1.08 ± 0.457 (0.727) C:75% T:83%	pCi/L	05/23/17 12:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1705790
Pace Project No.: 30219102

QC Batch: 258854	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
Associated Lab Samples: 30219102001	

METHOD BLANK: 1275013	Matrix: Water
Associated Lab Samples: 30219102001	

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0785 ± 0.358 (0.213) C:NA T:90%	pCi/L	05/22/17 18:52	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1705790

Pace Project No.: 30219102

QC Batch: 258855

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 30219102001

METHOD BLANK: 1275014

Matrix: Water

Associated Lab Samples: 30219102001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.179 ± 0.354 (0.780) C:76% T:77%	pCi/L	05/23/17 12:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1705790
Pace Project No.: 30219102

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

Date: 05/24/2017 03:24 PM

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-B	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: B42951			RunNo: 42951					
Prep Date:		Analysis Date: 5/22/2017			SeqNo: 1351761		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCSLL-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B42951		RunNo: 42951					
Prep Date:			Analysis Date: 5/22/2017		SeqNo: 1351762		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	97.5	50	150			
Boron	ND	0.040	0.04000	0	99.9	50	150			
Cadmium	0.0021	0.0020	0.002000	0	106	50	150			
Chromium	ND	0.0060	0.006000	0	95.3	50	150			
Cobalt	ND	0.0060	0.006000	0	96.3	50	150			
Copper	ND	0.0060	0.006000	0	79.8	50	150			
Iron	ND	0.020	0.02000	0	98.4	50	150			
Manganese	ND	0.0020	0.002000	0	99.5	50	150			
Molybdenum	0.0080	0.0080	0.008000	0	100	50	150			
Nickel	ND	0.010	0.005000	0	98.6	50	150			
Silver	ND	0.0050	0.005000	0	99.0	50	150			
Zinc	ND	0.010	0.005000	0	102	50	150			

Sample ID	LCSLL-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B42951		RunNo: 42951					
Prep Date:			Analysis Date: 5/22/2017		SeqNo: 1351985		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	113	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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B42951		RunNo: 42951					
Prep Date:			Analysis Date: 5/22/2017		SeqNo: 1351986		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.51	0.020	0.5000	0	101	85	115			
Barium	0.48	0.0020	0.5000	0	96.6	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.46	0.0060	0.5000	0	92.6	85	115			
Copper	0.48	0.0060	0.5000	0	95.6	85	115			
Iron	0.47	0.020	0.5000	0	94.0	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	93.9	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	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	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: C42837		RunNo: 42837					
Prep Date:			Analysis Date: 5/16/2017		SeqNo: 1347259		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.5	85	115			
Lead	0.012	0.00050	0.01250	0	95.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.1	85	115			
Uranium	0.012	0.00050	0.01250	0	95.1	85	115			

Sample ID	LCSLL			SampType:	LCSLL			TestCode:	EPA 200.8: Dissolved Metals		
Client ID:	BatchQC			Batch ID:	C42837			RunNo:	42837		
Prep Date:				Analysis Date:	5/16/2017			SeqNo:	1347260	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	0.0010	0.001000	0	85.5	50	150				
Lead	ND	0.00050	0.0005000	0	95.0	50	150				
Selenium	ND	0.0010	0.001000	0	78.2	50	150				
Uranium	ND	0.00050	0.0005000	0	93.0	50	150				

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: C42837			RunNo: 42837					
Prep Date:		Analysis Date: 5/16/2017			SeqNo: 1347261		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								
Uranium	ND	0.00050								

Qualifiers:

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

B Analyte detected in the 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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-31959	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	31959	RunNo:	43092					
Prep Date:	5/25/2017	Analysis Date:	5/26/2017	SeqNo:	1356204	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-31959	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	31959	RunNo:	43092					
Prep Date:	5/25/2017	Analysis Date:	5/26/2017	SeqNo:	1356205	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. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A42849	RunNo:	42849					
Prep Date:		Analysis Date:	5/16/2017	SeqNo:	1348068	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A42849	RunNo:	42849					
Prep Date:		Analysis Date:	5/16/2017	SeqNo:	1348069	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.46	0.10	0.5000	0	91.9	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R42953	RunNo:	42953					
Prep Date:		Analysis Date:	5/19/2017	SeqNo:	1351588	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R42953	RunNo:	42953					
Prep Date:		Analysis Date:	5/19/2017	SeqNo:	1351589	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.3	90	110			
Sulfate	9.7	0.50	10.00	0	97.5	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	98.8	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-31899	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	31899	RunNo:	43002					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1353092	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-31899	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	31899	RunNo:	43002					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1353094	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.097	0.010	0.1000	0	96.7	70	130			

Sample ID	1705790-001CMS	SampType:	MS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	R.O. Reject	Batch ID:	31899	RunNo:	43002					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1353109	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	53.6	131			

Sample ID	1705790-001CMSD	SampType:	MSD	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	R.O. Reject	Batch ID:	31899	RunNo:	43002					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1353110	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	99.7	53.6	131	2.53	23.8	

Qualifiers:

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

B Analyte detected in the 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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	1705790-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject	Batch ID:	31839	RunNo:	42945					
Prep Date:	5/19/2017	Analysis Date:	5/22/2017	SeqNo:	1352327	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.4	1.0	5.000	0	107	87.2	145			
Surr: DNOP	0.59		0.5000		118	72.4	157			

Sample ID	1705790-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject	Batch ID:	31839	RunNo:	42945					
Prep Date:	5/19/2017	Analysis Date:	5/22/2017	SeqNo:	1352328	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	103	87.2	145	3.77	20	
Surr: DNOP	0.57		0.5000		113	72.4	157	0	0	

Sample ID	LCS-31839	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW	Batch ID:	31839	RunNo:	42945					
Prep Date:	5/19/2017	Analysis Date:	5/22/2017	SeqNo:	1352330	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	82.8	146			
Surr: DNOP	0.56		0.5000		111	72.4	157			

Sample ID	MB-31839	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID:	31839	RunNo:	42945					
Prep Date:	5/19/2017	Analysis Date:	5/22/2017	SeqNo:	1352331	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		114	72.4	157			

Qualifiers:

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

B Analyte detected in the 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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-31784		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	31784		RunNo:	42939			
Prep Date:	5/17/2017		Analysis Date:	5/22/2017		SeqNo:	1352291		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.0		2.500		78.8	50.4	123			
Surr: Tetrachloro-m-xylene	2.2		2.500		86.8	41.2	147			

Sample ID	LCS-31784		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSSW		Batch ID:	31784		RunNo:	42939			
Prep Date:	5/17/2017		Analysis Date:	5/22/2017		SeqNo:	1352292		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.5	1.0	5.000	0	89.2	34.2	145			
Aroclor 1260	4.2	1.0	5.000	0	83.2	37.1	148			
Surr: Decachlorobiphenyl	1.8		2.500		72.8	50.4	123			
Surr: Tetrachloro-m-xylene	2.1		2.500		83.2	41.2	147			

Sample ID	LCSD-31784		SampType:	LCSD		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSS02		Batch ID:	31784		RunNo:	42939			
Prep Date:	5/17/2017		Analysis Date:	5/22/2017		SeqNo:	1352293		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.4	1.0	5.000	0	88.4	34.2	145	0.901	54	
Aroclor 1260	4.0	1.0	5.000	0	80.4	37.1	148	3.42	53.9	
Surr: Decachlorobiphenyl	1.7		2.500		68.8	50.4	123	0	0	
Surr: Tetrachloro-m-xylene	2.0		2.500		80.4	41.2	147	0	0	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	W42829	RunNo:	42829					
Prep Date:		Analysis Date:	5/16/2017	SeqNo:	1347122	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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		95.5	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	W42829	RunNo:	42829					
Prep Date:		Analysis Date:	5/16/2017	SeqNo:	1347123	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	25	1.0	20.00	0	125	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.8	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.6		10.00		95.6	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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-31785	SampType:	MBLK	TestCode:	EPA Method 8310: PAHs					
Client ID:	PBW	Batch ID:	31785	RunNo:	42940					
Prep Date:	5/17/2017	Analysis Date:	5/22/2017	SeqNo:	1351255	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	16		20.00		80.6	49.1	127			

Sample ID	LCS-31785	SampType:	LCS	TestCode:	EPA Method 8310: PAHs					
Client ID:	LCSW	Batch ID:	31785	RunNo:	42940					
Prep Date:	5/17/2017	Analysis Date:	5/22/2017	SeqNo:	1351267	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	46	2.0	80.00	0	56.9	33.3	141			
1-Methylnaphthalene	46	2.0	80.20	0	57.4	35.5	139			
2-Methylnaphthalene	45	2.0	80.00	0	56.6	30.7	139			
Acenaphthylene	51	2.5	80.20	0	63.9	60.2	119			
Acenaphthene	50	2.0	80.00	0	62.5	56	126			
Fluorene	5.0	0.80	8.020	0	62.7	51.6	129			
Phenanthrene	2.6	0.60	4.020	0	65.7	58.8	129			
Anthracene	2.7	0.60	4.020	0	67.9	59.9	121			
Fluoranthene	5.7	0.30	8.020	0	71.3	48	145			
Pyrene	5.6	0.30	8.020	0	69.2	56.2	130			
Benz(a)anthracene	0.54	0.070	0.8020	0	67.3	50.4	142			
Chrysene	2.7	0.20	4.020	0	66.4	54.7	134			
Benzo(b)fluoranthene	0.66	0.10	1.002	0	65.9	61.8	120			
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	55.9	134			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	LCS-31785		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	31785		RunNo:	42940			
Prep Date:	5/17/2017		Analysis Date:	5/22/2017		SeqNo:	1351267		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.32	0.070	0.5020	0	63.7	49.1	142			
Dibenz(a,h)anthracene	0.68	0.12	1.002	0	67.9	57.8	134			
Benzo(g,h,i)perylene	0.66	0.12	1.000	0	66.0	57.2	134			
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0	61.4	58.2	137			
Surr: Benzo(e)pyrene	15		20.00		73.1	49.1	127			

Sample ID	LCSD-31785		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	31785		RunNo:	42940			
Prep Date:	5/17/2017		Analysis Date:	5/22/2017		SeqNo:	1351268		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	50	2.0	80.00	0	62.2	33.3	141	8.86	20.3	
1-Methylnaphthalene	51	2.0	80.20	0	63.0	35.5	139	9.30	22.7	
2-Methylnaphthalene	50	2.0	80.00	0	62.1	30.7	139	9.20	22.6	
Acenaphthylene	56	2.5	80.20	0	70.2	60.2	119	9.42	22.6	
Acenaphthene	55	2.0	80.00	0	68.7	56	126	9.39	21.4	
Fluorene	5.5	0.80	8.020	0	68.7	51.6	129	9.11	23.6	
Phenanthrene	2.9	0.60	4.020	0	71.9	58.8	129	9.04	24.7	
Anthracene	3.0	0.60	4.020	0	75.6	59.9	121	10.7	23.9	
Fluoranthene	6.3	0.30	8.020	0	78.9	48	145	10.1	25.1	
Pyrene	6.1	0.30	8.020	0	76.3	56.2	130	9.77	23.7	
Benz(a)anthracene	0.60	0.070	0.8020	0	74.8	50.4	142	10.5	19.2	
Chrysene	2.9	0.20	4.020	0	72.9	54.7	134	9.29	19.8	
Benzo(b)fluoranthene	0.73	0.10	1.002	0	72.9	61.8	120	10.1	22.1	
Benzo(k)fluoranthene	0.37	0.070	0.5000	0	74.0	55.9	134	11.4	27.2	
Benzo(a)pyrene	0.36	0.070	0.5020	0	71.7	49.1	142	11.8	30.2	
Dibenz(a,h)anthracene	0.75	0.12	1.002	0	74.9	57.8	134	9.79	23.8	
Benzo(g,h,i)perylene	0.72	0.12	1.000	0	72.0	57.2	134	8.70	19.1	
Indeno(1,2,3-cd)pyrene	1.4	0.25	2.004	0	68.4	58.2	137	10.8	19.6	
Surr: Benzo(e)pyrene	16		20.00		80.6	49.1	127	0		

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-31898	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	31898	RunNo:	42979					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1352280	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	ND	2.5								

Sample ID	LCS-31898	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSSW	Batch ID:	31898	RunNo:	42979					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1352281	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	23	2.5	20.00	0	117	62.4	146			

Sample ID	LCSD-31898	SampType:	LCSD	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSS02	Batch ID:	31898	RunNo:	42979					
Prep Date:	5/23/2017	Analysis Date:	5/23/2017	SeqNo:	1352282	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	22	2.5	20.00	0	108	62.4	146	8.53	21	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID:	PBW	Batch ID: B42857			RunNo: 42857						
Prep Date:		Analysis Date: 5/17/2017			SeqNo: 1348781		Units: %Rec				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		9.6		10.00		96.2	70	130			

Sample ID	2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID:	LCSW	Batch ID: B42857			RunNo: 42857						
Prep Date:		Analysis Date: 5/17/2017			SeqNo: 1348782		Units: %Rec				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		9.9		10.00		98.8	70	130			

Sample ID	rb1	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	GW42902		RunNo:	42902					
Prep Date:		Analysis Date:	5/18/2017		SeqNo:	1349973	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		101	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#: 1705790

01-Jun-17

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-31769	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	31769	RunNo:	42866					
Prep Date:	5/16/2017	Analysis Date:	5/17/2017	SeqNo:	1348678	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-31769	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	31769	RunNo:	42866					
Prep Date:	5/16/2017	Analysis Date:	5/17/2017	SeqNo:	1348679	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	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
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: NAVAJO REFINING CO

Work Order Number: 1705790

ReptNo: 1

Received By: Erin Melendrez 5/16/2017 9:35:00 AM
Completed By: Ashley Gallegos 5/16/2017 10:11:58 AM
Reviewed By: *aj* 5/16/17

UAG
AG

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: (6) 1
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No Adjusted? (12 or 12 unless noted)
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: *RE*

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	0.3	Good	Yes			

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, May 30, 2017 3:21 PM
To: 'Dade, Lewis (Randy)'
Cc: 'McWatters, Denise'; 'O'Brien, Robert (Bob) K.'; 'Holder, Mike'; Marks, Allison, EMNRD; Brancard, Bill, EMNRD; 'Combs, Robert'; Griswold, Jim, EMNRD
Subject: Discharge Permit GW-028 Monthly Report dated May 15, 2017 - April 2017 Reporting Period

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and finds the Permittee to be in compliance.

OCD observes that the last quarterly environmental analytical sampling event occurred in January of 2017, but the environmental analytical data was subsequently submitted with the Permittee's April 15, 2017 Monthly Report. OCD recommends for consistency in Monthly RO Reject Water Reporting that the quarterly environmental analytical data results should accompany the Monthly Report following the completion of quarterly environmental analyses for consistency in reporting.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)



May 15, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – May 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's April 2017 monthly report, for the period of April 1-30, 2017, under the Permit.

Specifically, this report covers the April 2017 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

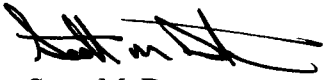
HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Name

Date May 15, 2017

Page 2

Sincerely,



Scott M. Denton

Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
4/1/2017	169.05	118.32	0.02	287.39	9,853.37
4/2/2017	134.30	118.87	0.02	253.19	8,680.80
4/3/2017	111.35	119.72	0.02	231.09	7,923.09
4/4/2017	111.76	120.08	0.02	231.86	7,949.49
4/5/2017	112.28	120.75	0.02	233.05	7,990.29
4/6/2017	111.85	120.71	0.02	232.58	7,974.17
4/7/2017	111.10	120.48	0.02	231.60	7,940.57
4/8/2017	110.57	120.67	0.02	231.26	7,928.91
4/9/2017	111.72	121.04	0.02	232.78	7,981.03
4/10/2017	114.19	122.19	0.02	236.40	8,105.14
4/11/2017	114.07	123.03	0.02	237.12	8,129.83
4/12/2017	114.42	123.60	0.02	238.04	8,161.37
4/13/2017	114.33	122.51	0.02	236.86	8,120.91
4/14/2017	113.60	122.19	0.02	235.81	8,084.91
4/15/2017	113.63	122.95	0.02	236.60	8,112.00
4/16/2017	113.38	123.25	0.02	236.65	8,113.71
4/17/2017	112.79	123.19	0.02	236.00	8,091.43
4/18/2017	111.77	122.77	0.02	234.56	8,042.06
4/19/2017	112.43	123.48	0.02	235.93	8,089.03
4/20/2017	119.46	114.61	0.02	234.09	8,025.94
4/21/2017	109.57	109.68	0.02	219.27	7,517.83
4/22/2017	135.05	110.59	0.02	245.66	8,422.63
4/23/2017	149.14	111.84	0.02	261.00	8,948.57
4/24/2017	132.65	111.71	0.02	244.38	8,378.74
4/25/2017	132.03	111.32	0.02	243.37	8,344.11
4/26/2017	132.81	112.26	0.02	245.09	8,403.09
4/27/2017	134.50	113.75	0.02	248.27	8,512.11
4/28/2017	133.79	113.44	0.02	247.25	8,477.14
4/29/2017	114.87	111.45	0.02	226.34	7,760.23
4/30/2017	111.99	112.47	0.04	224.50	7,697.14
TOTAL (bbls/month)					245,759.66

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, April 14, 2017 11:53 AM
To: 'Dade, Lewis (Randy)'
Cc: 'McWatters, Denise'; 'O'Brien, Robert (Bob) K.'; 'Holder, Mike'; Marks, Allison, EMNRD; Brancard, Bill, EMNRD; 'Combs, Robert'; Griswold, Jim, EMNRD
Subject: ACO WQA-OCD-CO-2015-002 RO Reject Water Discharge Monthly Report for March 2017

Randy:

The New Mexico Oil Conservation Division has completed its review of the above subject report and finds the Permittee to be in compliance.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)



April 12, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – March 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's March 2017 monthly report, for the period of March 1-31, 2017, under the Permit.

Specifically, this report covers the March 2017 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

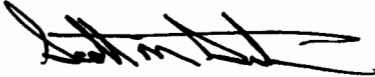
To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the first quarter, samples were collected for the RO reject streams from the permanent units on January 9, 2017. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results were provided in the monthly report submitted on February 15, 2017, for the January 2017 reporting period.

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Name
Date April 12, 2017
Page 2

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
3/1/2017	0.00	7.24	4.55	11.79	404.23
3/2/2017	0.00	0.13	0.03	0.16	5.49
3/3/2017	63.74	8.93	0.03	72.70	2,492.57
3/4/2017	13.12	0.06	18.37	31.55	1,081.71
3/5/2017	0.00	0.07	126.94	127.01	4,354.63
3/6/2017	0.00	0.08	106.72	106.80	3,661.71
3/7/2017	0.00	0.08	53.24	53.32	1,828.11
3/8/2017	0.00	0.08	0.04	0.12	4.11
3/9/2017	0.00	0.08	0.02	0.10	3.43
3/10/2017	0.00	0.08	0.02	0.10	3.43
3/11/2017	0.00	0.08	0.02	0.10	3.43
3/12/2017	0.00	0.08	0.02	0.10	3.43
3/13/2017	0.00	0.08	0.02	0.10	3.43
3/14/2017	0.00	0.08	0.02	0.10	3.43
3/15/2017	0.00	0.09	0.02	0.11	3.77
3/16/2017	0.00	0.08	0.02	0.10	3.43
3/17/2017	0.00	0.09	0.02	0.11	3.77
3/18/2017	85.92	4.81	0.02	90.75	3,111.43
3/19/2017	136.32	0.09	0.02	136.43	4,677.60
3/20/2017	138.28	0.09	0.02	138.39	4,744.80
3/21/2017	139.22	0.09	0.02	139.33	4,777.03
3/22/2017	138.66	30.51	0.02	169.19	5,800.80
3/23/2017	139.98	110.37	0.02	250.37	8,584.11
3/24/2017	140.95	110.13	0.02	251.10	8,609.14
3/25/2017	141.30	110.57	0.02	251.89	8,636.23
3/26/2017	140.80	111.31	0.02	252.13	8,644.46
3/27/2017	140.95	111.81	0.02	252.78	8,666.74
3/28/2017	140.32	110.36	0.02	250.70	8,595.43
3/29/2017	141.72	105.80	0.02	247.54	8,487.09
3/30/2017	132.85	109.43	0.02	242.30	8,307.43
3/31/2017	142.58	119.88	0.02	262.48	8,999.31
TOTAL (bbls/month)					114,505.71

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, April 13, 2017 11:34 AM
To: 'Dade, Lewis (Randy)'
Subject: RE: Emailing: 2017-02-15 GW-028 Monthly Report

Randy:

Yes, this is it. Don't know why my Jan. 2017 version was missing the lab data?

Anyway, I have reviewed the RO Reject discharge data from 1/9/17, and it looks good with the exception of the usual exceedances, i.e., F, SO₄, and TDS. It is interesting Chlorides are well below the 250 ppm. Will get it into the Admin. Record.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

-----Original Message-----

From: Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]
Sent: Thursday, April 13, 2017 10:57 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: FW: Emailing: 2017-02-15 GW-028 Monthly Report

Carl,

Here is the GW-28 Report from 02-15-2017 with attached Analytical Data from 01/09/2017. If there is anything else you need, let me know. Have a great week and weekend. Thanks, Randy

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, April 13, 2017 9:44 AM
To: 'Dade, Lewis (Randy)'
Subject: RE: GW-28 March Report
Attachments: GW-28 March 2017 Report.pdf

Randy:

Good morning. I was reviewing the above subject report, the section with the following paragraph:

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the first quarter, **samples were collected for the RO reject streams from the permanent units on January 9, 2017**. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). **The corresponding analytical results were provided in the monthly report submitted on February 15, 2017, for the January 2017 reporting period.**

OCD did not receive the environmental analytical laboratory data results in the submitted February 15, 2017 monthly report. HollyFrontier should have conducted sampling again around April 9, 2017?

Could you please submit the January 9, 2017 environmental analytical data results to OCD by COB on Friday, April 21, 2017. Also, OCD should be receiving the next quarterly sampling data results with the April 2017 submittal.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

From: Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]
Sent: Wednesday, April 12, 2017 11:33 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Cc: Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: GW-28 March Report

Here is the monthly GW-28 Discharge Permit Report for March 2017. If there are any questions, please contact me. Thanks, Randy.



April 12, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – March 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's March 2017 monthly report, for the period of March 1-31, 2017, under the Permit.

Specifically, this report covers the March 2017 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the first quarter, samples were collected for the RO reject streams from the permanent units on January 9, 2017. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results were provided in the monthly report submitted on February 15, 2017, for the January 2017 reporting period.

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
3/1/2017	0.00	7.24	4.55	11.79	404.23
3/2/2017	0.00	0.13	0.03	0.16	5.49
3/3/2017	63.74	8.93	0.03	72.70	2,492.57
3/4/2017	13.12	0.06	18.37	31.55	1,081.71
3/5/2017	0.00	0.07	126.94	127.01	4,354.63
3/6/2017	0.00	0.08	106.72	106.80	3,661.71
3/7/2017	0.00	0.08	53.24	53.32	1,828.11
3/8/2017	0.00	0.08	0.04	0.12	4.11
3/9/2017	0.00	0.08	0.02	0.10	3.43
3/10/2017	0.00	0.08	0.02	0.10	3.43
3/11/2017	0.00	0.08	0.02	0.10	3.43
3/12/2017	0.00	0.08	0.02	0.10	3.43
3/13/2017	0.00	0.08	0.02	0.10	3.43
3/14/2017	0.00	0.08	0.02	0.10	3.43
3/15/2017	0.00	0.09	0.02	0.11	3.77
3/16/2017	0.00	0.08	0.02	0.10	3.43
3/17/2017	0.00	0.09	0.02	0.11	3.77
3/18/2017	85.92	4.81	0.02	90.75	3,111.43
3/19/2017	136.32	0.09	0.02	136.43	4,677.60
3/20/2017	138.28	0.09	0.02	138.39	4,744.80
3/21/2017	139.22	0.09	0.02	139.33	4,777.03
3/22/2017	138.66	30.51	0.02	169.19	5,800.80
3/23/2017	139.98	110.37	0.02	250.37	8,584.11
3/24/2017	140.95	110.13	0.02	251.10	8,609.14
3/25/2017	141.30	110.57	0.02	251.89	8,636.23
3/26/2017	140.80	111.31	0.02	252.13	8,644.46
3/27/2017	140.95	111.81	0.02	252.78	8,666.74
3/28/2017	140.32	110.36	0.02	250.70	8,595.43
3/29/2017	141.72	105.80	0.02	247.54	8,487.09
3/30/2017	132.85	109.43	0.02	242.30	8,307.43
3/31/2017	142.58	119.88	0.02	262.48	8,999.31
TOTAL (bbls/month)					114,505.71

Chavez, Carl J, EMNRD

From: Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Sent: Thursday, April 13, 2017 10:57 AM
To: Chavez, Carl J, EMNRD
Cc: Dade, Lewis (Randy)
Subject: FW: Emailing: 2017-02-15 GW-028 Monthly Report
Attachments: 2017-02-15 GW-028 Monthly Report.pdf

Carl,

Here is the GW-28 Report from 02-15-2017 with attached Analytical Data from 01/09/2017. If there is anything else you need, let me know. Have a great week and weekend. Thanks, Randy

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February 15, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – January 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's January 2016 monthly report, for the period of January 1-31, 2017, under the Permit.

Specifically, this report covers the January 2017 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the fourth quarter, samples were collected for the RO reject streams from the permanent units on January 5, 2017. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results are provided in Attachment 2.

On October 21, 2016, Navajo notified OCD of its selection of a Class 1 disposal well as an alternative disposal method for the RO reject. Navajo submitted a revised application to renew and modify Discharge Permit GW-028 on January 13, 2017, to reflect this selection.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

Attachment 2: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
1/1/2017	0.00	128.70	125.72	254.42	8,722.97
1/2/2017	0.00	128.90	125.67	254.57	8,728.11
1/3/2017	0.00	128.73	125.77	254.50	8,725.71
1/4/2017	0.00	128.72	125.61	254.33	8,719.89
1/5/2017	0.15	128.90	125.86	254.90	8,739.43
1/6/2017	0.00	126.99	125.41	252.40	8,653.71
1/7/2017	0.00	124.68	124.50	249.19	8,543.66
1/8/2017	0.00	124.60	124.03	248.63	8,524.46
1/9/2017	0.00	115.64	116.60	232.25	7,962.86
1/10/2017	0.00	121.95	125.59	247.54	8,487.09
1/11/2017	0.00	122.38	126.03	248.41	8,516.91
1/12/2017	0.00	122.27	127.79	250.06	8,573.49
1/13/2017	21.23	107.10	128.94	257.27	8,820.69
1/14/2017	134.75	38.19	129.63	302.57	10,373.83
1/15/2017	136.47	39.28	130.72	306.47	10,507.54
1/16/2017	135.08	38.13	130.27	303.48	10,405.03
1/17/2017	135.69	38.65	130.06	304.40	10,436.57
1/18/2017	138.87	10.23	132.21	281.31	9,644.91
1/19/2017	123.39	64.66	131.14	319.18	10,943.31
1/20/2017	100.50	123.69	129.28	353.46	12,118.63
1/21/2017	97.46	122.80	129.00	349.26	11,974.63
1/22/2017	110.04	72.43	130.03	312.49	10,713.94
1/23/2017	125.38	42.27	131.51	299.15	10,256.57
1/24/2017	126.09	44.09	131.21	301.39	10,333.37
1/25/2017	126.86	43.15	131.16	301.16	10,325.49
1/26/2017	127.32	42.46	131.19	300.98	10,319.31
1/27/2017	127.20	42.55	130.96	300.72	10,310.40
1/28/2017	127.16	40.74	130.99	298.89	10,247.66
1/29/2017	127.49	16.81	131.11	275.41	9,442.63
1/30/2017	127.90	0.10	131.11	259.11	8,883.77
1/31/2017	127.71	0.07	130.88	258.66	8,868.34
TOTAL (bbls/month)					297,824.91

Attachment 2
Analytical Lab Report



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

February 14, 2017

Mike Holder
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly R.O. Reject

OrderNo.: 1701253

Dear Mike Holder:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/9/2017 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 06, 2017.

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 1701253

Date Reported: 2/14/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 1/5/2017 4:30:00 PM

Lab ID: 1701253-001

Matrix: AQUEOUS

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	1/13/2017 5:17:37 PM	C40026
Lead	ND	0.0025		mg/L	5	1/13/2017 5:17:37 PM	C40026
Selenium	0.010	0.0050		mg/L	5	1/13/2017 5:17:37 PM	C40026
Uranium	0.0052	0.0025		mg/L	5	1/13/2017 5:17:37 PM	C40026
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.29	0.662		pCi/L	1	2/2/2017	R40526
Radium-226 ±	0.644	0.662		pCi/L	1	2/2/2017	R40526
Radium-228	0.624	1.02		pCi/L	1	2/2/2017	R40526
Radium-228 ±	0.507	1.02		pCi/L	1	2/2/2017	R40526
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.5	2.0		mg/L	20	1/9/2017 10:08:12 PM	R39919
Chloride	74	10		mg/L	20	1/9/2017 10:08:12 PM	R39919
Sulfate	1400	50		mg/L	100	1/11/2017 1:08:20 AM	R39952
Nitrate+Nitrite as N	2.3	1.0		mg/L	5	1/10/2017 12:12:18 AM	R39919
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3410	20.0	*	mg/L	1	1/11/2017 5:59:00 PM	29623
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: LSB
Cyanide	ND	0.0100		mg/L	1	1/16/2017	R40523
SM4500-H+B: PH							Analyst: JRR
pH	7.87	1.68	H	pH units	1	1/9/2017 3:34:06 PM	R39934
EPA METHOD 200.7: DISSOLVED METALS							Analyst: TES
Aluminum	ND	0.020		mg/L	1	1/22/2017 9:55:24 PM	A40181
Barium	0.066	0.0020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Boron	0.10	0.040		mg/L	1	1/24/2017 11:12:53 AM	A40223
Cadmium	ND	0.0020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Chromium	ND	0.0060		mg/L	1	1/24/2017 11:12:53 AM	A40223
Cobalt	ND	0.0060		mg/L	1	1/24/2017 11:12:53 AM	A40223
Copper	ND	0.0060		mg/L	1	1/26/2017 9:36:42 AM	A40288
Iron	ND	0.020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Manganese	ND	0.0020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Molybdenum	0.0088	0.0080		mg/L	1	1/24/2017 11:12:53 AM	A40223
Nickel	ND	0.010		mg/L	1	1/24/2017 11:12:53 AM	A40223
Silver	ND	0.0050		mg/L	1	1/24/2017 11:12:53 AM	A40223
Zinc	0.023	0.010		mg/L	1	1/24/2017 11:40:30 AM	A40223
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	1/10/2017 12:14:44 PM	29608

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1701253

Date Reported: 2/14/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 1/5/2017 4:30:00 PM

Lab ID: 1701253-001

Matrix: AQUEOUS

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/12/2017 2:15:17 PM	G39990
Surr: BFB	87.6	70-130		%Rec	1	1/12/2017 2:15:17 PM	G39990
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/10/2017 10:10:43 AM	29609
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1221	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1232	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1242	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1248	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1254	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1260	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Surr: Decachlorobiphenyl	60.4	26.1-140		%Rec	1	1/11/2017 10:44:00 AM	29618
Surr: Tetrachloro-m-xylene	53.2	15-123		%Rec	1	1/11/2017 10:44:00 AM	29618
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/12/2017 4:33:48 PM	29657
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/12/2017 4:33:48 PM	29657
Surr: DNOP	115	77.1-144		%Rec	1	1/12/2017 4:33:48 PM	29657
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	1/11/2017 12:16:05 PM	29615
1-Methylnaphthalene	ND	2.0		µg/L	1	1/11/2017 12:16:05 PM	29615
2-Methylnaphthalene	ND	2.0		µg/L	1	1/11/2017 12:16:05 PM	29615
Benzo(a)pyrene	ND	0.070		µg/L	1	1/11/2017 12:16:05 PM	29615
Surr: Benzo(e)pyrene	81.0	24.4-130		%Rec	1	1/11/2017 12:16:05 PM	29615
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Toluene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Ethylbenzene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Carbon Tetrachloride	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Chloroform	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1-Dichloroethane	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1-Dichloroethene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Methylene Chloride	ND	3.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701253

Date Reported: 2/14/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 1/5/2017 4:30:00 PM

Lab ID: 1701253-001

Matrix: AQUEOUS

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Vinyl chloride	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Xylenes, Total	ND	1.5		µg/L	1	1/9/2017 5:53:01 PM	W39912
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
Surr: Dibromofluoromethane	118	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
Surr: Toluene-d8	87.9	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	1/25/2017	29866

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1701253

Date Reported: 2/14/2017

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Quarterly R.O. Reject

Collection Date:

Lab ID: 1701253-002

Matrix: TRIP BLANK

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/12/2017 3:43:50 PM	G39990
Surr: BFB	83.7	70-130		%Rec	1	1/12/2017 3:43:50 PM	G39990
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/10/2017 10:25:50 AM	29609
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Toluene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Ethylbenzene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Carbon Tetrachloride	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Chloroform	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1-Dichloroethane	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1-Dichloroethene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Methylene Chloride	ND	3.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Vinyl chloride	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Xylenes, Total	ND	1.5		µg/L	1	1/9/2017 6:22:09 PM	W39912
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912
Surr: Dibromofluoromethane	116	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912
Surr: Toluene-d8	88.9	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A40181	RunNo:	40181					
Prep Date:		Analysis Date:	1/22/2017	SeqNo:	1259966	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID	LLLCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A40181	RunNo:	40181					
Prep Date:		Analysis Date:	1/22/2017	SeqNo:	1259967	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	104	50	150			

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A40181	RunNo:	40181					
Prep Date:		Analysis Date:	1/22/2017	SeqNo:	1259968	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A40223	RunNo:	40223					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1261933	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A40223	RunNo:	40223					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1261934	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	96.4	85	115			
Boron	0.50	0.040	0.5000	0	99.6	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 | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A40223		RunNo: 40223					
Prep Date:			Analysis Date: 1/24/2017		SeqNo: 1261934		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	97.1	85	115			
Chromium	0.48	0.0060	0.5000	0	95.4	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.8	85	115			
Iron	0.47	0.020	0.5000	0	93.5	85	115			
Manganese	0.47	0.0020	0.5000	0	94.2	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.45	0.010	0.5000	0	90.4	85	115			
Silver	0.098	0.0050	0.1000	0	97.9	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Sample ID	LLLCS-A	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: A40223			RunNo: 40223					
Prep Date:		Analysis Date: 1/24/2017			SeqNo: 1261935		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	112	50	150			
Boron	0.040	0.040	0.04000	0	101	50	150			
Cadmium	ND	0.0020	0.002000	0	98.5	50	150			
Chromium	0.0060	0.0060	0.006000	0	101	50	150			
Cobalt	ND	0.0060	0.006000	0	98.5	50	150			
Iron	ND	0.020	0.02000	0	99.3	50	150			
Manganese	ND	0.0020	0.002000	0	92.5	50	150			
Molybdenum	0.0092	0.0080	0.008000	0	115	50	150			
Nickel	ND	0.010	0.005000	0	110	50	150			
Silver	0.0052	0.0050	0.005000	0	105	50	150			
Zinc	ND	0.010	0.005000	0	109	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	1701253-001GMSDL		SampType:	MSD		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	R.O. Reject		Batch ID:	C40026		RunNo:	40026			
Prep Date:			Analysis Date:	1/13/2017		SeqNo:	1254502	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.14	0.0050	0.1250	0.002183	108	70	130	0.715	20	
Lead	0.064	0.0025	0.06250	0	102	70	130	0.187	20	
Selenium	0.14	0.0050	0.1250	0.01048	106	70	130	1.86	20	
Uranium	0.071	0.0025	0.06250	0.005175	105	70	130	0.245	20	

Sample ID	1701253-001GMSLL		SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	R.O. Reject		Batch ID:	C40026		RunNo:	40026			
Prep Date:			Analysis Date:	1/13/2017		SeqNo:	1254503	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.14	0.0050	0.1250	0.002183	107	70	130			
Lead	0.064	0.0025	0.06250	0	102	70	130			
Selenium	0.14	0.0050	0.1250	0.01048	104	70	130			
Uranium	0.071	0.0025	0.06250	0.005175	105	70	130			

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	LCSW		Batch ID:	C40026		RunNo:	40026			
Prep Date:			Analysis Date:	1/13/2017		SeqNo:	1254506	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	98.8	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.012	0.00050	0.01250	0	98.4	85	115			

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	C40026		RunNo:	40026			
Prep Date:			Analysis Date:	1/13/2017		SeqNo:	1254507	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	98.2	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0010	0.0010	0.001000	0	102	50	150			
Uranium	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	PBW		Batch ID:	C40026		RunNo:	40026			
Prep Date:			Analysis Date:	1/13/2017		SeqNo:	1254508	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 | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	C40026	RunNo:	40026					
Prep Date:		Analysis Date:	1/13/2017	SeqNo:	1254508	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								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29608	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	29608	RunNo:	39928					
Prep Date:	1/9/2017	Analysis Date:	1/10/2017	SeqNo:	1251284	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-29608	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	29608	RunNo:	39928					
Prep Date:	1/9/2017	Analysis Date:	1/10/2017	SeqNo:	1251285	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	98.3	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R39919	RunNo:	39919					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1251098	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R39919	RunNo:	39919					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1251099	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	97.8	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R39952	RunNo:	39952					
Prep Date:		Analysis Date:	1/10/2017	SeqNo:	1251860	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R39952	RunNo:	39952					
Prep Date:		Analysis Date:	1/10/2017	SeqNo:	1251861	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.4	0.50	10.00	0	94.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29609	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	29609	RunNo:	39918					
Prep Date:	1/10/2017	Analysis Date:	1/10/2017	SeqNo:	1251243	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-29609	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	29609	RunNo:	39918					
Prep Date:	1/10/2017	Analysis Date:	1/10/2017	SeqNo:	1251245	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	93.8	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-29657		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	29657		RunNo:	39973				
Prep Date:	1/12/2017		Analysis Date:	1/12/2017		SeqNo:	1252916		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	110	63.2	155				
Surr: DNOP	0.56		0.5000		111	77.1	144				

Sample ID	MB-29657	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW	Batch ID:	29657		RunNo:	39973				
Prep Date:	1/12/2017	Analysis Date:	1/12/2017		SeqNo:	1252917	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		108	77.1	144			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29618		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1251667	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.6		2.500		63.2	26.1	140			
Surr: Tetrachloro-m-xylene	1.4		2.500		55.2	15	123			

Sample ID	LCS-29618(1221)		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1251690	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	3.1	1.0	5.000	0	61.8	15	200			
Surr: Decachlorobiphenyl	1.8		2.500		71.6	26.1	140			
Surr: Tetrachloro-m-xylene	1.2		2.500		48.0	15	123			

Sample ID	LCSD-29618(1221)		SampType:	LCSD		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSS02		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252020	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	3.4	1.0	5.000	0	68.4	15	200	10.1	0	
Surr: Decachlorobiphenyl	1.8		2.500		72.8	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.3		2.500		50.8	15	123	0	0	

Sample ID	LCS-29618(1232)		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252021	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	3.6	1.0	5.000	0	73.0	15	200			
Surr: Decachlorobiphenyl	1.8		2.500		70.4	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.4	15	123			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCSD-29618(1232)	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	29618	RunNo:	39949					
Prep Date:	1/10/2017	Analysis Date:	1/11/2017	SeqNo:	1252022	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	3.6	1.0	5.000	0	72.0	15	200	1.38	0	
Surr: Decachlorobiphenyl	1.7		2.500		68.8	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		61.6	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	W39912	RunNo:	39912					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1250932	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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.4	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.2	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.5	70	130			
Surr: Toluene-d8	8.9		10.00		88.9	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	W39912	RunNo:	39912					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1250933	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	115	70	130			
Toluene	19	1.0	20.00	0	97.2	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.8	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		89.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	9.1		10.00		91.5	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29615		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252566	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	17		20.00		83.8	24.4	130			

Sample ID	LCS-29615		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252567	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	47	2.0	80.00	0	59.0	33.3	141			
1-Methylnaphthalene	45	2.0	80.20	0	56.4	35.5	139			
2-Methylnaphthalene	43	2.0	80.00	0	54.1	30.7	139			
Acenaphthylene	53	2.5	80.20	0	65.8	60.2	119			
Acenaphthene	49	2.0	80.00	0	61.9	56	126			
Fluorene	5.0	0.80	8.020	0	61.7	51.6	129			
Phenanthrene	2.8	0.60	4.020	0	69.7	58.8	129			
Anthracene	2.7	0.60	4.020	0	66.9	59.9	121			
Fluoranthene	5.9	0.30	8.020	0	72.9	48	145			
Pyrene	6.3	0.30	8.020	0	78.7	56.2	130			
Benz(a)anthracene	0.58	0.070	0.8020	0	72.3	50.4	142			
Chrysene	3.0	0.20	4.020	0	73.9	54.7	134			
Benzo(b)fluoranthene	0.73	0.10	1.002	0	72.9	61.8	120			
Benzo(k)fluoranthene	0.37	0.070	0.5000	0	74.0	55.9	134			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-29615		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252567	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.36	0.070	0.5020	0	71.7	49.1	142			
Dibenz(a,h)anthracene	0.76	0.12	1.002	0	75.8	57.8	134			
Benzo(g,h,i)perylene	0.77	0.12	1.000	0	77.0	57.2	134			
Indeno(1,2,3-cd)pyrene	1.4	0.25	2.004	0	68.9	58.2	137			
Surr: Benzo(e)pyrene	15		20.00		75.3	24.4	130			

Sample ID	LCSD-29615		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252568	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	0	53.3	33.3	141	10.2	20.3	
1-Methylnaphthalene	41	2.0	80.20	0	51.0	35.5	139	10.0	22.7	
2-Methylnaphthalene	39	2.0	80.00	0	49.0	30.7	139	9.91	22.6	
Acenaphthylene	48	2.5	80.20	0	59.6	60.2	119	9.90	22.6	S
Acenaphthene	45	2.0	80.00	0	56.1	56	126	9.70	21.4	
Fluorene	4.6	0.80	8.020	0	57.1	51.6	129	7.76	23.6	
Phenanthrene	2.5	0.60	4.020	0	62.2	58.8	129	11.3	24.7	
Anthracene	2.4	0.60	4.020	0	59.5	59.9	121	11.8	23.9	S
Fluoranthene	5.3	0.30	8.020	0	65.6	48	145	10.6	25.1	
Pyrene	5.7	0.30	8.020	0	70.8	56.2	130	10.5	23.7	
Benz(a)anthracene	0.52	0.070	0.8020	0	64.8	50.4	142	10.9	19.2	
Chrysene	2.6	0.20	4.020	0	65.7	54.7	134	11.8	19.8	
Benzo(b)fluoranthene	0.66	0.10	1.002	0	65.9	61.8	120	10.1	22.1	
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	55.9	134	11.4	27.2	
Benzo(a)pyrene	0.32	0.070	0.5020	0	63.7	49.1	142	11.8	30.2	
Dibenz(a,h)anthracene	0.69	0.12	1.002	0	68.9	57.8	134	9.66	23.8	
Benzo(g,h,i)perylene	0.69	0.12	1.000	0	69.0	57.2	134	11.0	19.1	
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0	61.4	58.2	137	11.5	19.6	
Surr: Benzo(e)pyrene	14		20.00		67.6	24.4	130	0		

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29866	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	29866	RunNo:	40252					
Prep Date:	1/25/2017	Analysis Date:	1/25/2017	SeqNo:	1262095	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-29866	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	29866	RunNo:	40252					
Prep Date:	1/25/2017	Analysis Date:	1/25/2017	SeqNo:	1262096	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	104	62.4	146			

Sample ID	LCSD-29866	SampType:	LCSD	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSS02	Batch ID:	29866	RunNo:	40252					
Prep Date:	1/25/2017	Analysis Date:	1/25/2017	SeqNo:	1262097	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	62.4	146	8.32	21	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R40523	SampType:	MBLK	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	PBW	Batch ID:	R40523	RunNo:	40523					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1269895	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	LCS-R40523	SampType:	LCS	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW	Batch ID:	R40523	RunNo:	40523					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1269896	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.485		0.5000	0	97.0	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	G39990	RunNo:	39990					
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253120	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	8.8		10.00		87.5	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	G39990	RunNo:	39990					
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253121	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	110	75.4	118			
Surr: BFB	9.2		10.00		92.5	70	130			

Sample ID	1701253-001a msd	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	G39990	RunNo:	39990					
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253124	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	0.01760	89.1	70	130	12.9	20	
Surr: BFB	9.0		10.00		89.7	70	130	0	0	

Sample ID	1701253-001a ms g	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	G39990	RunNo:	40004					
Prep Date:		Analysis Date:	1/13/2017	SeqNo:	1254101	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0.01760	102	70	130			
Surr: BFB	8.8		10.00		87.8	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R40526	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R40526	RunNo:	40526					
Prep Date:		Analysis Date:	2/2/2017	SeqNo:	1269905	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.127	0.468								
Radium-226 ±	0.291	0.468								
Radium-228	0.0949	0.653								
Radium-228 ±	0.29	0.653								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29623	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	PBW	Batch ID:	29623	RunNo:	39966
Prep Date:	1/10/2017	Analysis Date:	1/11/2017	SeqNo:	1252489 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	ND	20.0			

Sample ID	LCS-29623	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	LCSW	Batch ID:	29623	RunNo:	39966
Prep Date:	1/10/2017	Analysis Date:	1/11/2017	SeqNo:	1252490 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1060	20.0	1000	0	106 80 120

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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
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: NAVAJO REFINING CO

Work Order Number: 1701253

RcptNo: 1

Received by/date:

RE

01/09/17

Logged By:

Ashley Gallegos

1/9/2017 9:20:00 AM

AG

Completed By:

Ashley Gallegos

1/9/2017 9:54:08 AM

AG

Reviewed By:

RA 01/09/17

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: 6 1
(<2 or >12 unless noted)
Adjusted? No
Checked by: Re

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	1.7	Good	Yes			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575 748.3311
(Fax) 575.746.5451

Quarterly RO Reject Sample Details Attachment



Project Name	Quarterly RO Reject
Sample Name	Brady Hubbard
Sample Company	Navajo Refining Co. LLC
Sample Date	1/5/17 @ 4:23 pm
Field Date	1/5/17 @ 4:51 pm

Sample Type	Other
Pre-weighed sample	<input type="checkbox"/>
Post-weighed sample	<input type="checkbox"/>

Physical Property	
State	<input type="checkbox"/>
Trade	<input checked="" type="checkbox"/>
Storage	<input type="checkbox"/>

Sample Location	One
-----------------	-----

Sample Location	Directly to sample jars
-----------------	-------------------------

Current Sample Location ☐ North Field R.O. Reject Discharge ☒ South Field R.O. Reject Discharge

Container	Size	Material	Concentration	Heat (Nethy)	HCL	HN03	H2SO4	NaOH	Mar-Sto3	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X				X				pH, Cl, F, S04, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc.) 1/5/17 Temp. 42.8°F, Humidity 42%, Wind Dir. East, Wind Speed 10.4 mph, Conditions Clear

Date and Time

Field Temp. 17.1C Field pH 7.69

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, March 16, 2017 8:42 AM
To: 'Dade, Lewis (Randy)'; Griswold, Jim, EMNRD; O'Brien, Robert (Bob) K.; Holder, Mike; McWatters, Denise
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: ACO WQA-OCD-CO-2015-002 RO Reject Water Discharge Monthly Report for February 2017

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and finds the Permittee to be in compliance.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

-----Original Message-----

From: Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]
Sent: Wednesday, March 15, 2017 11:22 AM
To: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; McWatters, Denise <Denise.McWatters@HollyFrontier.com>
Cc: Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: Emailing: 2017-03-15 GW-028 Monthly Report

Please see attached the 2017-03-15 GW-028 Monthly Report.

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.
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March 15, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – February 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's monthly report, for the period of February 1-28, 2017, under the Permit.

This report includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid are monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1 as specified in the Permit. Additionally, the monthly total is also included.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
2/1/2017	128.97	25.26	131.54	285.77	9,797.83
2/2/2017	130.92	38.72	133.04	302.68	10,377.60
2/3/2017	132.16	37.22	134.00	303.38	10,401.60
2/4/2017	131.56	35.51	133.79	300.86	10,315.20
2/5/2017	131.62	38.34	133.72	303.68	10,411.89
2/6/2017	131.41	40.62	133.38	305.41	10,471.20
2/7/2017	131.35	40.82	133.37	305.54	10,475.66
2/8/2017	131.31	41.13	133.21	305.65	10,479.43
2/9/2017	134.20	44.22	133.25	311.67	10,685.83
2/10/2017	137.35	42.49	132.84	312.68	10,720.46
2/11/2017	136.69	41.79	132.36	310.84	10,657.37
2/12/2017	136.04	41.59	129.25	306.88	10,521.60
2/13/2017	133.06	39.47	125.82	298.35	10,229.14
2/14/2017	130.93	39.47	120.26	290.66	9,965.49
2/15/2017	128.60	49.12	117.45	295.17	10,120.11
2/16/2017	126.95	50.17	117.72	294.84	10,108.80
2/17/2017	126.12	49.54	48.41	224.07	7,682.40
2/18/2017	125.88	50.41	138.53	314.82	10,793.83
2/19/2017	126.48	54.54	167.71	348.73	11,956.46
2/20/2017	126.10	60.34	169.28	355.72	12,196.11
2/21/2017	123.65	60.78	168.48	352.91	12,099.77
2/22/2017	122.47	60.04	167.91	350.42	12,014.40
2/23/2017	121.64	57.47	167.37	346.48	11,879.31
2/24/2017	121.93	58.37	168.24	348.54	11,949.94
2/25/2017	122.70	57.91	168.33	348.94	11,963.66
2/26/2017	124.18	60.68	168.92	353.78	12,129.60
2/27/2017	19.11	61.26	168.78	249.15	8,542.29
2/28/2017	0.00	64.81	144.31	209.12	7,169.83
TOTAL (bbls/month)					296,116.80

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, February 16, 2017 2:16 PM
To: 'Dade, Lewis (Randy)'
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Marks, Allison, EMNRD; Brancard, Bill, EMNRD; Combs, Robert; Griswold, Jim, EMNRD
Subject: ACO WQA-OCD-CO-2015-002 RO Reject Water Discharge Monthly Report for January 2017
Attachments: Memo Jan 2017.pdf

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and finds the Permittee to be in compliance.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

Chavez, Carl J, EMNRD

From: Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Sent: Wednesday, February 15, 2017 11:24 AM
To: Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Marks, Allison, EMNRD; Brancard, Bill, EMNRD; Combs, Robert
Subject: January 2017 GW-028 Monthly Report
Attachments: 2017-02-15 GW-028 Monthly Report.pdf

Please find the January 2017 GW-028 monthly report. If there are any questions or comments, please feel free to contact me.



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February 15, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – January 2017 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's January 2016 monthly report, for the period of January 1-31, 2017, under the Permit.

Specifically, this report covers the January 2017 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

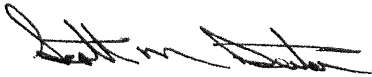
Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the fourth quarter, samples were collected for the RO reject streams from the permanent units on January 5, 2017. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results are provided in Attachment 2.

On October 21, 2016, Navajo notified OCD of its selection of a Class 1 disposal well as an alternative disposal method for the RO reject. Navajo submitted a revised application to renew and modify Discharge Permit GW-028 on January 13, 2017, to reflect this selection.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

Attachment 2: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
1/1/2017	0.00	128.70	125.72	254.42	8,722.97
1/2/2017	0.00	128.90	125.67	254.57	8,728.11
1/3/2017	0.00	128.73	125.77	254.50	8,725.71
1/4/2017	0.00	128.72	125.61	254.33	8,719.89
1/5/2017	0.15	128.90	125.86	254.91	8,739.77
1/6/2017	0.00	126.99	125.41	252.40	8,653.71
1/7/2017	0.00	124.68	124.50	249.18	8,543.31
1/8/2017	0.00	124.60	124.03	248.63	8,524.46
1/9/2017	0.00	115.64	116.60	232.24	7,962.51
1/10/2017	0.00	121.95	125.59	247.54	8,487.09
1/11/2017	0.00	122.38	126.03	248.41	8,516.91
1/12/2017	0.00	122.27	127.79	250.06	8,573.49
1/13/2017	21.23	107.10	128.94	257.27	8,820.69
1/14/2017	134.75	38.19	129.63	302.57	10,373.83
1/15/2017	136.47	39.28	130.72	306.47	10,507.54
1/16/2017	135.08	38.13	130.27	303.48	10,405.03
1/17/2017	135.69	38.65	130.06	304.40	10,436.57
1/18/2017	138.87	10.23	132.21	281.31	9,644.91
1/19/2017	123.39	64.66	131.14	319.19	10,943.66
1/20/2017	100.50	123.69	129.28	353.47	12,118.97
1/21/2017	97.46	122.80	129.00	349.26	11,974.63
1/22/2017	110.04	72.43	130.03	312.50	10,714.29
1/23/2017	125.38	42.27	131.51	299.16	10,256.91
1/24/2017	126.09	44.09	131.21	301.39	10,333.37
1/25/2017	126.86	43.15	131.16	301.17	10,325.83
1/26/2017	127.32	42.46	131.19	300.97	10,318.97
1/27/2017	127.20	42.55	130.96	300.71	10,310.06
1/28/2017	127.16	40.74	130.99	298.89	10,247.66
1/29/2017	127.49	16.81	131.11	275.41	9,442.63
1/30/2017	127.90	0.10	131.11	259.11	8,883.77
1/31/2017	127.71	0.07	130.88	258.66	8,868.34
TOTAL (bbls/month)					297,825.60

Attachment 2
Analytical Lab Report



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

February 14, 2017

Mike Holder
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly R.O. Reject

OrderNo.: 1701253

Dear Mike Holder:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/9/2017 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 06, 2017.

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 1701253

Date Reported: 2/14/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 1/5/2017 4:30:00 PM

Lab ID: 1701253-001

Matrix: AQUEOUS

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	1/13/2017 5:17:37 PM	C40026
Lead	ND	0.0025		mg/L	5	1/13/2017 5:17:37 PM	C40026
Selenium	0.010	0.0050		mg/L	5	1/13/2017 5:17:37 PM	C40026
Uranium	0.0052	0.0025		mg/L	5	1/13/2017 5:17:37 PM	C40026
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.29	0.662		pCi/L	1	2/2/2017	R40526
Radium-226 ±	0.644	0.662		pCi/L	1	2/2/2017	R40526
Radium-228	0.624	1.02		pCi/L	1	2/2/2017	R40526
Radium-228 ±	0.507	1.02		pCi/L	1	2/2/2017	R40526
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.5	2.0		mg/L	20	1/9/2017 10:08:12 PM	R39919
Chloride	74	10		mg/L	20	1/9/2017 10:08:12 PM	R39919
Sulfate	1400	50		mg/L	100	1/11/2017 1:08:20 AM	R39952
Nitrate+Nitrite as N	2.3	1.0		mg/L	5	1/10/2017 12:12:18 AM	R39919
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3410	20.0	*	mg/L	1	1/11/2017 5:59:00 PM	29623
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: LSB
Cyanide	ND	0.0100		mg/L	1	1/16/2017	R40523
SM4500-H+B: PH							Analyst: JRR
pH	7.87	1.68	H	pH units	1	1/9/2017 3:34:06 PM	R39934
EPA METHOD 200.7: DISSOLVED METALS							Analyst: TES
Aluminum	ND	0.020		mg/L	1	1/22/2017 9:55:24 PM	A40181
Barium	0.066	0.0020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Boron	0.10	0.040		mg/L	1	1/24/2017 11:12:53 AM	A40223
Cadmium	ND	0.0020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Chromium	ND	0.0060		mg/L	1	1/24/2017 11:12:53 AM	A40223
Cobalt	ND	0.0060		mg/L	1	1/24/2017 11:12:53 AM	A40223
Copper	ND	0.0060		mg/L	1	1/26/2017 9:36:42 AM	A40288
Iron	ND	0.020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Manganese	ND	0.0020		mg/L	1	1/24/2017 11:12:53 AM	A40223
Molybdenum	0.0088	0.0080		mg/L	1	1/24/2017 11:12:53 AM	A40223
Nickel	ND	0.010		mg/L	1	1/24/2017 11:12:53 AM	A40223
Silver	ND	0.0050		mg/L	1	1/24/2017 11:12:53 AM	A40223
Zinc	0.023	0.010		mg/L	1	1/24/2017 11:40:30 AM	A40223
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	1/10/2017 12:14:44 PM	29608

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1701253

Date Reported: 2/14/2017

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 1/5/2017 4:30:00 PM

Lab ID: 1701253-001

Matrix: AQUEOUS

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/12/2017 2:15:17 PM	G39990
Surr: BFB	87.6	70-130		%Rec	1	1/12/2017 2:15:17 PM	G39990
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/10/2017 10:10:43 AM	29609
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1221	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1232	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1242	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1248	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1254	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Aroclor 1260	ND	1.0		µg/L	1	1/11/2017 10:44:00 AM	29618
Surr: Decachlorobiphenyl	60.4	26.1-140		%Rec	1	1/11/2017 10:44:00 AM	29618
Surr: Tetrachloro-m-xylene	53.2	15-123		%Rec	1	1/11/2017 10:44:00 AM	29618
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/12/2017 4:33:48 PM	29657
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/12/2017 4:33:48 PM	29657
Surr: DNOP	115	77.1-144		%Rec	1	1/12/2017 4:33:48 PM	29657
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	1/11/2017 12:16:05 PM	29615
1-Methylnaphthalene	ND	2.0		µg/L	1	1/11/2017 12:16:05 PM	29615
2-Methylnaphthalene	ND	2.0		µg/L	1	1/11/2017 12:16:05 PM	29615
Benzo(a)pyrene	ND	0.070		µg/L	1	1/11/2017 12:16:05 PM	29615
Surr: Benzo(e)pyrene	81.0	24.4-130		%Rec	1	1/11/2017 12:16:05 PM	29615
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Toluene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Ethylbenzene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Carbon Tetrachloride	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Chloroform	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1-Dichloroethane	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1-Dichloroethene	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Methylene Chloride	ND	3.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1701253

Date Reported: 2/14/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 1/5/2017 4:30:00 PM

Lab ID: 1701253-001

Matrix: AQUEOUS

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Vinyl chloride	ND	1.0		µg/L	1	1/9/2017 5:53:01 PM	W39912
Xylenes, Total	ND	1.5		µg/L	1	1/9/2017 5:53:01 PM	W39912
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
Surr: Dibromofluoromethane	118	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
Surr: Toluene-d8	87.9	70-130		%Rec	1	1/9/2017 5:53:01 PM	W39912
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	1/25/2017	29866

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1701253

Date Reported: 2/14/2017

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Quarterly R.O. Reject

Collection Date:

Lab ID: 1701253-002

Matrix: TRIP BLANK

Received Date: 1/9/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/12/2017 3:43:50 PM	G39990
Surr: BFB	83.7	70-130		%Rec	1	1/12/2017 3:43:50 PM	G39990
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/10/2017 10:25:50 AM	29609
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Toluene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Ethylbenzene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Carbon Tetrachloride	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Chloroform	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1-Dichloroethane	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1-Dichloroethene	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Methylene Chloride	ND	3.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Vinyl chloride	ND	1.0		µg/L	1	1/9/2017 6:22:09 PM	W39912
Xylenes, Total	ND	1.5		µg/L	1	1/9/2017 6:22:09 PM	W39912
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912
Surr: Dibromofluoromethane	116	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912
Surr: Toluene-d8	88.9	70-130		%Rec	1	1/9/2017 6:22:09 PM	W39912

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A40181	RunNo:	40181					
Prep Date:		Analysis Date:	1/22/2017	SeqNo:	1259966	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID	LLLCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A40181	RunNo:	40181					
Prep Date:		Analysis Date:	1/22/2017	SeqNo:	1259967	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	104	50	150			

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A40181	RunNo:	40181					
Prep Date:		Analysis Date:	1/22/2017	SeqNo:	1259968	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A40223	RunNo:	40223					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1261933	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A40223	RunNo:	40223					
Prep Date:		Analysis Date:	1/24/2017	SeqNo:	1261934	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	96.4	85	115			
Boron	0.50	0.040	0.5000	0	99.6	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 | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A40223		RunNo: 40223					
Prep Date:			Analysis Date: 1/24/2017		SeqNo: 1261934		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	97.1	85	115			
Chromium	0.48	0.0060	0.5000	0	95.4	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.8	85	115			
Iron	0.47	0.020	0.5000	0	93.5	85	115			
Manganese	0.47	0.0020	0.5000	0	94.2	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.45	0.010	0.5000	0	90.4	85	115			
Silver	0.098	0.0050	0.1000	0	97.9	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Sample ID	LLLCS-A	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: A40223			RunNo: 40223					
Prep Date:		Analysis Date: 1/24/2017			SeqNo: 1261935		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	112	50	150			
Boron	0.040	0.040	0.04000	0	101	50	150			
Cadmium	ND	0.0020	0.002000	0	98.5	50	150			
Chromium	0.0060	0.0060	0.006000	0	101	50	150			
Cobalt	ND	0.0060	0.006000	0	98.5	50	150			
Iron	ND	0.020	0.02000	0	99.3	50	150			
Manganese	ND	0.0020	0.002000	0	92.5	50	150			
Molybdenum	0.0092	0.0080	0.008000	0	115	50	150			
Nickel	ND	0.010	0.005000	0	110	50	150			
Silver	0.0052	0.0050	0.005000	0	105	50	150			
Zinc	ND	0.010	0.005000	0	109	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	1701253-001GMSDL		SampType: MSD	TestCode: EPA 200.8: Dissolved Metals						
Client ID:	R.O. Reject		Batch ID: C40026	RunNo: 40026						
Prep Date:			Analysis Date: 1/13/2017	SeqNo: 1254502		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.14	0.0050	0.1250	0.002183	108	70	130	0.715	20	
Lead	0.064	0.0025	0.06250	0	102	70	130	0.187	20	
Selenium	0.14	0.0050	0.1250	0.01048	106	70	130	1.86	20	
Uranium	0.071	0.0025	0.06250	0.005175	105	70	130	0.245	20	

Sample ID	1701253-001GMSLL		SampType: MS	TestCode: EPA 200.8: Dissolved Metals						
Client ID:	R.O. Reject		Batch ID: C40026	RunNo: 40026						
Prep Date:			Analysis Date: 1/13/2017	SeqNo: 1254503		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.14	0.0050	0.1250	0.002183	107	70	130			
Lead	0.064	0.0025	0.06250	0	102	70	130			
Selenium	0.14	0.0050	0.1250	0.01048	104	70	130			
Uranium	0.071	0.0025	0.06250	0.005175	105	70	130			

Sample ID	LCS		SampType: LCS	TestCode: EPA 200.8: Dissolved Metals						
Client ID:	LCSW		Batch ID: C40026	RunNo: 40026						
Prep Date:			Analysis Date: 1/13/2017	SeqNo: 1254506		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	98.8	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.012	0.00050	0.01250	0	98.4	85	115			

Sample ID	LLLCS		SampType: LCSLL	TestCode: EPA 200.8: Dissolved Metals						
Client ID:	BatchQC		Batch ID: C40026	RunNo: 40026						
Prep Date:			Analysis Date: 1/13/2017	SeqNo: 1254507		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	98.2	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0010	0.0010	0.001000	0	102	50	150			
Uranium	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID	MB		SampType: MBLK	TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW		Batch ID: C40026	RunNo: 40026						
Prep Date:			Analysis Date: 1/13/2017	SeqNo: 1254508		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 | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	C40026	RunNo:	40026					
Prep Date:		Analysis Date:	1/13/2017	SeqNo:	1254508	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								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29608	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	29608	RunNo:	39928					
Prep Date:	1/9/2017	Analysis Date:	1/10/2017	SeqNo:	1251284	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-29608	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	29608	RunNo:	39928					
Prep Date:	1/9/2017	Analysis Date:	1/10/2017	SeqNo:	1251285	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	98.3	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R39919	RunNo:	39919					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1251098	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R39919	RunNo:	39919					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1251099	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	97.8	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R39952	RunNo:	39952					
Prep Date:		Analysis Date:	1/10/2017	SeqNo:	1251860	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R39952	RunNo:	39952					
Prep Date:		Analysis Date:	1/10/2017	SeqNo:	1251861	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.4	0.50	10.00	0	94.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29609	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	29609	RunNo:	39918					
Prep Date:	1/10/2017	Analysis Date:	1/10/2017	SeqNo:	1251243	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-29609	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	29609	RunNo:	39918					
Prep Date:	1/10/2017	Analysis Date:	1/10/2017	SeqNo:	1251245	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	93.8	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-29657		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	29657		RunNo:	39973				
Prep Date:	1/12/2017		Analysis Date:	1/12/2017		SeqNo:	1252916		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	110	63.2	155				
Surr: DNOP	0.56		0.5000		111	77.1	144				

Sample ID	MB-29657		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	29657		RunNo:	39973				
Prep Date:	1/12/2017		Analysis Date:	1/12/2017		SeqNo:	1252917		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	1.0									
Motor Oil Range Organics (MRO)	ND	5.0									
Surr: DNOP	1.1		1.000		108	77.1	144				

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29618		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1251667	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.6		2.500		63.2	26.1	140			
Surr: Tetrachloro-m-xylene	1.4		2.500		55.2	15	123			

Sample ID	LCS-29618(1221)		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1251690	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	3.1	1.0	5.000	0	61.8	15	200			
Surr: Decachlorobiphenyl	1.8		2.500		71.6	26.1	140			
Surr: Tetrachloro-m-xylene	1.2		2.500		48.0	15	123			

Sample ID	LCSD-29618(1221)		SampType:	LCSD		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSS02		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252020	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	3.4	1.0	5.000	0	68.4	15	200	10.1	0	
Surr: Decachlorobiphenyl	1.8		2.500		72.8	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.3		2.500		50.8	15	123	0	0	

Sample ID	LCS-29618(1232)		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	29618		RunNo:	39949			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252021	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	3.6	1.0	5.000	0	73.0	15	200			
Surr: Decachlorobiphenyl	1.8		2.500		70.4	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.4	15	123			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCSD-29618(1232)	SampType: LCSD			TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID: 29618			RunNo: 39949					
Prep Date:	1/10/2017	Analysis Date: 1/11/2017			SeqNo: 1252022		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	3.6	1.0	5.000	0	72.0	15	200	1.38	0	
Surr: Decachlorobiphenyl	1.7		2.500		68.8	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		61.6	15	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	W39912	RunNo:	39912					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1250932	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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.4	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.2	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.5	70	130			
Surr: Toluene-d8	8.9		10.00		88.9	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	W39912	RunNo:	39912					
Prep Date:		Analysis Date:	1/9/2017	SeqNo:	1250933	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	115	70	130			
Toluene	19	1.0	20.00	0	97.2	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.8	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		89.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	9.1		10.00		91.5	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29615		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252566	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	17		20.00		83.8	24.4	130			

Sample ID	LCS-29615		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252567	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	47	2.0	80.00	0	59.0	33.3	141			
1-Methylnaphthalene	45	2.0	80.20	0	56.4	35.5	139			
2-Methylnaphthalene	43	2.0	80.00	0	54.1	30.7	139			
Acenaphthylene	53	2.5	80.20	0	65.8	60.2	119			
Acenaphthene	49	2.0	80.00	0	61.9	56	126			
Fluorene	5.0	0.80	8.020	0	61.7	51.6	129			
Phenanthrene	2.8	0.60	4.020	0	69.7	58.8	129			
Anthracene	2.7	0.60	4.020	0	66.9	59.9	121			
Fluoranthene	5.9	0.30	8.020	0	72.9	48	145			
Pyrene	6.3	0.30	8.020	0	78.7	56.2	130			
Benz(a)anthracene	0.58	0.070	0.8020	0	72.3	50.4	142			
Chrysene	3.0	0.20	4.020	0	73.9	54.7	134			
Benzo(b)fluoranthene	0.73	0.10	1.002	0	72.9	61.8	120			
Benzo(k)fluoranthene	0.37	0.070	0.5000	0	74.0	55.9	134			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-29615		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252567	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.36	0.070	0.5020	0	71.7	49.1	142			
Dibenz(a,h)anthracene	0.76	0.12	1.002	0	75.8	57.8	134			
Benzo(g,h,i)perylene	0.77	0.12	1.000	0	77.0	57.2	134			
Indeno(1,2,3-cd)pyrene	1.4	0.25	2.004	0	68.9	58.2	137			
Surr: Benzo(e)pyrene	15		20.00		75.3	24.4	130			

Sample ID	LCSD-29615		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	29615		RunNo:	39968			
Prep Date:	1/10/2017		Analysis Date:	1/11/2017		SeqNo:	1252568	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	43	2.0	80.00	0	53.3	33.3	141	10.2	20.3	
1-Methylnaphthalene	41	2.0	80.20	0	51.0	35.5	139	10.0	22.7	
2-Methylnaphthalene	39	2.0	80.00	0	49.0	30.7	139	9.91	22.6	
Acenaphthylene	48	2.5	80.20	0	59.6	60.2	119	9.90	22.6	S
Acenaphthene	45	2.0	80.00	0	56.1	56	126	9.70	21.4	
Fluorene	4.6	0.80	8.020	0	57.1	51.6	129	7.76	23.6	
Phenanthrene	2.5	0.60	4.020	0	62.2	58.8	129	11.3	24.7	
Anthracene	2.4	0.60	4.020	0	59.5	59.9	121	11.8	23.9	S
Fluoranthene	5.3	0.30	8.020	0	65.6	48	145	10.6	25.1	
Pyrene	5.7	0.30	8.020	0	70.8	56.2	130	10.5	23.7	
Benz(a)anthracene	0.52	0.070	0.8020	0	64.8	50.4	142	10.9	19.2	
Chrysene	2.6	0.20	4.020	0	65.7	54.7	134	11.8	19.8	
Benzo(b)fluoranthene	0.66	0.10	1.002	0	65.9	61.8	120	10.1	22.1	
Benzo(k)fluoranthene	0.33	0.070	0.5000	0	66.0	55.9	134	11.4	27.2	
Benzo(a)pyrene	0.32	0.070	0.5020	0	63.7	49.1	142	11.8	30.2	
Dibenz(a,h)anthracene	0.69	0.12	1.002	0	68.9	57.8	134	9.66	23.8	
Benzo(g,h,i)perylene	0.69	0.12	1.000	0	69.0	57.2	134	11.0	19.1	
Indeno(1,2,3-cd)pyrene	1.2	0.25	2.004	0	61.4	58.2	137	11.5	19.6	
Surr: Benzo(e)pyrene	14		20.00		67.6	24.4	130	0		

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29866	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	29866	RunNo:	40252					
Prep Date:	1/25/2017	Analysis Date:	1/25/2017	SeqNo:	1262095	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-29866	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	29866	RunNo:	40252					
Prep Date:	1/25/2017	Analysis Date:	1/25/2017	SeqNo:	1262096	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	104	62.4	146			

Sample ID	LCSD-29866	SampType:	LCSD	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSS02	Batch ID:	29866	RunNo:	40252					
Prep Date:	1/25/2017	Analysis Date:	1/25/2017	SeqNo:	1262097	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	62.4	146	8.32	21	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R40523	SampType:	MBLK	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	PBW	Batch ID:	R40523	RunNo:	40523					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1269895	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	LCS-R40523	SampType:	LCS	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW	Batch ID:	R40523	RunNo:	40523					
Prep Date:		Analysis Date:	1/16/2017	SeqNo:	1269896	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.485		0.5000	0	97.0	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	G39990	RunNo:	39990					
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253120	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	8.8		10.00		87.5	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	G39990	RunNo:	39990					
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253121	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	110	75.4	118			
Surr: BFB	9.2		10.00		92.5	70	130			

Sample ID	1701253-001a msd	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	G39990	RunNo:	39990					
Prep Date:		Analysis Date:	1/12/2017	SeqNo:	1253124	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	0.01760	89.1	70	130	12.9	20	
Surr: BFB	9.0		10.00		89.7	70	130	0	0	

Sample ID	1701253-001a ms g	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	G39990	RunNo:	40004					
Prep Date:		Analysis Date:	1/13/2017	SeqNo:	1254101	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0.01760	102	70	130			
Surr: BFB	8.8		10.00		87.8	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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R40526	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R40526	RunNo:	40526					
Prep Date:		Analysis Date:	2/2/2017	SeqNo:	1269905	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.127	0.468								
Radium-226 ±	0.291	0.468								
Radium-228	0.0949	0.653								
Radium-228 ±	0.29	0.653								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1701253

14-Feb-17

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-29623	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	PBW	Batch ID:	29623	RunNo:	39966
Prep Date:	1/10/2017	Analysis Date:	1/11/2017	SeqNo:	1252489 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	ND	20.0			

Sample ID	LCS-29623	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids
Client ID:	LCSW	Batch ID:	29623	RunNo:	39966
Prep Date:	1/10/2017	Analysis Date:	1/11/2017	SeqNo:	1252490 Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1060	20.0	1000	0	106 80 120

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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
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: NAVAJO REFINING CO

Work Order Number: 1701253

RcptNo: 1

Received by/date:

RE

01/09/17

Logged By:

Ashley Gallegos

1/9/2017 9:20:00 AM

AG

Completed By:

Ashley Gallegos

1/9/2017 9:54:08 AM

AG

Reviewed By:

RA 01/09/17

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: 6 1
(<2 or >12 unless noted)
Adjusted? No
Checked by: Re

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	1.7	Good	Yes			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575 748.3311
(Fax) 575.746.5451

Quarterly RO Reject Sample Details Attachment



Project Name	Quarterly RO Reject
Sample Name	Brady Hubbard
Sample Company	Navajo Refining Co. LLC
Sample Date	1/5/17 @ 4:23 pm
Field Date	1/5/17 @ 4:51 pm

Sample Type	Other
Pre-weighed sample	<input type="checkbox"/>
Post-weighed sample	<input type="checkbox"/>

Physical Property	
State	<input type="checkbox"/>
Trade	<input checked="" type="checkbox"/>
Storage	<input type="checkbox"/>

Sample Location	One
-----------------	-----

Sample Location	Directly to sample jars
-----------------	-------------------------

Current Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge	<input checked="" type="checkbox"/> South Field R.O. Reject Discharge
-------------------------	--	---

Container	Size	Material	Concentration	Heat (Nethy)	HCL	HN03	H2SO4	NaOH	Mar-Sto3	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X								pH, Cl, F, S04, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc.)	1/5/17 Temp. 42.8°F, Humidity 42%, Wind Dir. East, Wind Speed 10.4 mph, Conditions Clear
Date and Time	

Field Temp. 17.1C Field pH 7.69

Storage Method	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	<input checked="" type="checkbox"/>
Ice	<input type="checkbox"/>
Other	<input type="checkbox"/>

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, January 17, 2017 2:52 PM
To: 'Dade, Lewis (Randy)'; Griswold, Jim, EMNRD
Cc: O'Brien, Robert (Bob) K.; McWatters, Denise; Holder, Mike; Denton, Scott; Combs, Robert; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: RE: December RO Reject Monthly Report WQA-OCD-CO-2015-002 ACO RO Reject Water Discharge Monthly Report for December 2016

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and finds the Permittee to be in compliance.

OCD is in receipt of the revised application and schedule on 1/13/17 for the UIC Class I (Non-hazardous) Disposal Well. OCD is currently reviewing and making final revisions to its discharge permit renewal and public notice for the newspapers.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

From: Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]
Sent: Thursday, January 12, 2017 1:52 PM
To: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; McWatters, Denise <Denise.McWatters@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Subject: December 2016 Monthly Report : Discharge Permit GW - 028

Please find the December 2016 GW-028 monthly report. If there are any questions or comments, please feel free to contact me.

Dade, Lewis (RANDY)

HF Navajo Ref LLC

Environmental Specialist IV

Environmental - Artesia

(575) 746-5281 Work

(575) 703-4735 Mobile

Lewis.Dade@HollyFrontier.com

501 E. MAIN

ARTESIA, NM. 88210

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January 12, 2017

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – December 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's December 2016 monthly report, for the period of December 1-31, 2016, under the Permit.

Specifically, this report covers the December 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the fourth quarter, samples were collected for the RO reject streams from the permanent units on October 11, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results were provided in the report submitted on December 16, 2016, for the November 2016 reporting period.

On October 21, 2016, Navajo notified OCD of its selection of a Class 1 disposal well as an alternative disposal method for the RO reject. Navajo is in the process of revising the application to renew and modify Discharge Permit GW-028 submitted on June 23, 2016, to reflect this selection.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott M. Denton", with a stylized flourish at the end.

Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
12/1/2016	132.08	142.87	38.88	313.83	10,759.89
12/2/2016	36.35	127.17	110.62	274.14	9,399.09
12/3/2016	11.88	123.09	133.81	268.78	9,215.31
12/4/2016	8.73	122.92	133.77	265.43	9,100.46
12/5/2016	2.12	122.94	133.69	258.76	8,871.77
12/6/2016	0.05	110.20	126.98	237.23	8,133.60
12/7/2016	0.00	119.56	120.85	240.41	8,242.63
12/8/2016	0.00	123.28	121.52	244.80	8,393.14
12/9/2016	0.00	124.34	121.65	245.99	8,433.94
12/10/2016	0.00	123.05	122.00	245.05	8,401.71
12/11/2016	0.00	124.81	122.27	247.08	8,471.31
12/12/2016	0.00	125.03	122.51	247.54	8,487.09
12/13/2016	0.00	125.22	122.58	247.80	8,496.00
12/14/2016	0.00	123.96	122.44	246.41	8,448.34
12/15/2016	0.00	125.47	122.87	248.33	8,514.17
12/16/2016	0.00	126.86	124.03	250.88	8,601.60
12/17/2016	0.00	126.26	123.46	249.72	8,561.83
12/18/2016	0.00	127.98	124.22	252.20	8,646.86
12/19/2016	0.00	126.95	125.10	252.05	8,641.71
12/20/2016	0.00	126.69	125.33	252.01	8,640.34
12/21/2016	0.00	129.02	126.26	255.27	8,752.11
12/22/2016	0.00	130.12	126.58	256.69	8,800.80
12/23/2016	0.00	128.41	125.62	254.03	8,709.60
12/24/2016	0.00	128.31	125.11	253.43	8,689.03
12/25/2016	0.00	128.06	125.01	253.07	8,676.69
12/26/2016	0.00	129.05	125.70	254.75	8,734.29
12/27/2016	0.00	129.81	126.25	256.05	8,778.86
12/28/2016	0.00	127.44	124.91	252.35	8,652.00
12/29/2016	0.00	127.62	124.88	252.50	8,657.14
12/30/2016	0.00	126.30	124.54	250.83	8,599.89
12/31/2016	0.00	127.45	124.82	252.27	8,649.26
TOTAL (bbls/month)					270,160.46

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, December 20, 2016 4:35 PM
To: 'Combs, Robert'
Cc: Griswold, Jim, EMNRD; McWatters, Denise (Denise.McWatters@hollyfrontier.com); O'Brien, Robert (Bob) K.; Holder, Mike (Mike.Holder@hollyfrontier.com); Denton, Scott (Scott.Denton@HollyFrontier.com); Marks, Allison, EMNRD
Subject: RE: November RO Reject Monthly Report WQA-OCD-CO-2015-002 ACO RO Reject Water Discharge Monthly Report for November 2016

Robert:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and finds the Permittee to be in compliance.

Please contact me if you have questions. Thank you.

From: Combs, Robert [mailto:Robert.Combs@HollyFrontier.com]
Sent: Friday, December 16, 2016 7:55 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Cc: McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Subject: November RO Reject Monthly Report

Jim & Carl,

Attached is the monthly report for the month of November concerning the RO Reject, as required by the GW-028 condition 4.B.7. This report will be mailed today.

Please let me know if you have any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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December 16, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – November 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's November 2016 monthly report, for the period of November 1-30, 2016, under the Permit.

Specifically, this report covers the November 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical results of a discharge sample collected on October 11, 2016 in accordance with Condition 4.B.1 for the fourth calendar quarter.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the fourth quarter, samples were collected for the RO reject streams from the permanent units on October 11, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results are provided in Attachment 2.

On October 21, 2016, Navajo notified OCD of its selection of a Class 1 disposal well as an alternative disposal method for the RO reject. Navajo is currently revising the application to renew and modify Discharge Permit GW-028 submitted on June 23, 2016, to reflect this selection.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

Attachment 2: Analytical Lab Report

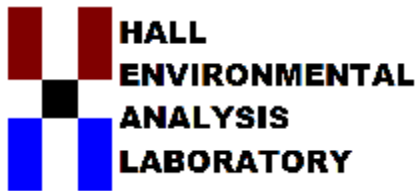
cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
11/1/2016	131.18	143.05	55.20	329.43	11,294.74
11/2/2016	131.71	143.11	56.78	331.59	11,368.80
11/3/2016	29.73	141.18	63.04	233.94	8,020.80
11/4/2016	73.35	142.31	58.64	274.30	9,404.57
11/5/2016	136.65	142.76	50.95	330.36	11,326.63
11/6/2016	137.55	142.70	52.06	332.30	11,393.14
11/7/2016	137.78	142.64	49.69	330.12	11,318.40
11/8/2016	139.07	143.06	53.20	335.33	11,497.03
11/9/2016	137.83	139.52	52.77	330.12	11,318.40
11/10/2016	139.04	142.68	55.00	336.72	11,544.69
11/11/2016	139.33	142.09	50.60	332.02	11,383.54
11/12/2016	139.06	142.09	52.70	333.85	11,446.29
11/13/2016	117.00	143.18	53.42	313.60	10,752.00
11/14/2016	55.16	137.56	38.91	231.63	7,941.60
11/15/2016	129.27	140.70	45.95	315.93	10,831.89
11/16/2016	129.66	140.82	45.01	315.50	10,817.14
11/17/2016	131.01	142.57	50.37	323.95	11,106.86
11/18/2016	130.93	142.10	49.35	322.39	11,053.37
11/19/2016	130.83	141.64	47.23	319.70	10,961.14
11/20/2016	131.05	141.62	45.90	318.57	10,922.40
11/21/2016	130.67	141.51	43.17	315.35	10,812.00
11/22/2016	131.03	141.94	44.67	317.65	10,890.86
11/23/2016	131.04	141.77	42.89	315.70	10,824.00
11/24/2016	132.65	142.55	49.49	324.70	11,132.57
11/25/2016	132.32	142.03	45.79	320.14	10,976.23
11/26/2016	132.91	142.02	47.08	322.01	11,040.34
11/27/2016	132.82	142.17	45.35	320.34	10,983.09
11/28/2016	133.01	142.55	45.24	320.80	10,998.86
11/29/2016	132.18	142.57	41.93	316.67	10,857.26
11/30/2016	132.44	142.71	42.61	317.77	10,894.97
TOTAL (bbls/month)					325,113.60

Attachment 2
Analytical Lab Report



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

November 16, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly RO Reject

OrderNo.: 1610613

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/13/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610613

Date Reported: 11/16/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly RO Reject

Collection Date: 10/11/2016 11:00:00 AM

Lab ID: 1610613-001

Matrix: AQUEOUS

Received Date: 10/13/2016 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	10/28/2016 2:36:13 PM	A38300
Lead	ND	0.00050		mg/L	1	10/25/2016 7:44:19 PM	B38214
Selenium	0.0089	0.0010		mg/L	1	10/25/2016 7:44:19 PM	B38214
Uranium	0.0064	0.00050		mg/L	1	10/25/2016 7:44:19 PM	B38214
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.525	0.552		pCi/L	1	11/16/2016	R38749
Radium-226 ±	0.445	0.552		pCi/L	1	11/16/2016	R38749
Radium-228	0.442	0.785		pCi/L	1	11/16/2016	R38749
Radium-228 ±	0.389	0.785		pCi/L	1	11/16/2016	R38749
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.6	2.0		mg/L	20	10/14/2016 12:43:59 AM	R37942
Chloride	280	10		mg/L	20	10/14/2016 12:43:59 AM	R37942
Sulfate	1900	50		mg/L	100	10/25/2016 4:52:17 PM	R38212
Nitrate+Nitrite as N	1.9	1.0		mg/L	5	10/14/2016 1:33:37 AM	R37942
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3960	20.0	*	mg/L	1	10/20/2016 2:01:00 PM	28134
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	10/19/2016	R38749
SM4500-H+B: PH							Analyst: JRR
pH	7.82	1.68	H	pH units	1	10/18/2016 1:22:12 PM	R38048
EPA METHOD 200.7: DISSOLVED METALS							Analyst: MED
Aluminum	ND	0.020		mg/L	1	10/25/2016 12:47:24 PM	A38197
Barium	0.079	0.0020		mg/L	1	10/21/2016 6:01:00 PM	B38141
Boron	0.092	0.040		mg/L	1	10/21/2016 6:01:00 PM	B38141
Cadmium	ND	0.0020		mg/L	1	10/21/2016 6:01:00 PM	B38141
Chromium	ND	0.0060		mg/L	1	10/21/2016 6:01:00 PM	B38141
Cobalt	ND	0.0060		mg/L	1	10/21/2016 6:01:00 PM	B38141
Copper	ND	0.0060		mg/L	1	10/25/2016 12:47:24 PM	A38197
Iron	ND	0.020		mg/L	1	10/25/2016 12:47:24 PM	A38197
Manganese	ND	0.0020		mg/L	1	10/21/2016 6:01:00 PM	B38141
Molybdenum	ND	0.0080		mg/L	1	10/21/2016 6:01:00 PM	B38141
Nickel	ND	0.010		mg/L	1	10/21/2016 6:01:00 PM	B38141
Silver	ND	0.0050		mg/L	1	10/21/2016 6:01:00 PM	B38141
Zinc	0.014	0.010		mg/L	1	10/21/2016 6:01:00 PM	B38141
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/21/2016 12:15:12 PM	28201

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1610613

Date Reported: 11/16/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly RO Reject

Collection Date: 10/11/2016 11:00:00 AM

Lab ID: 1610613-001

Matrix: AQUEOUS

Received Date: 10/13/2016 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/19/2016 9:14:28 PM	W38060
Surr: BFB	90.7	70-130		%Rec	1	10/19/2016 9:14:28 PM	W38060
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/17/2016 4:51:55 PM	28082
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Aroclor 1221	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Aroclor 1232	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Aroclor 1242	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Aroclor 1248	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Aroclor 1254	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Aroclor 1260	ND	1.0		µg/L	1	10/19/2016 8:28:00 AM	28040
Surr: Decachlorobiphenyl	117	26.1-140		%Rec	1	10/19/2016 8:28:00 AM	28040
Surr: Tetrachloro-m-xylene	112	15-123		%Rec	1	10/19/2016 8:28:00 AM	28040
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/14/2016 10:46:55 PM	28063
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/14/2016 10:46:55 PM	28063
Surr: DNOP	117	77.1-144		%Rec	1	10/14/2016 10:46:55 PM	28063
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	10/20/2016 3:19:37 PM	28041
1-Methylnaphthalene	ND	2.0		µg/L	1	10/20/2016 3:19:37 PM	28041
2-Methylnaphthalene	ND	2.0		µg/L	1	10/20/2016 3:19:37 PM	28041
Benzo(a)pyrene	ND	0.070		µg/L	1	10/20/2016 3:19:37 PM	28041
Surr: Benzo(e)pyrene	80.6	20-153		%Rec	1	10/20/2016 3:19:37 PM	28041
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Toluene	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Ethylbenzene	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Carbon Tetrachloride	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Chloroform	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
1,1-Dichloroethane	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
1,1-Dichloroethene	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Methylene Chloride	ND	3.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1610613

Date Reported: 11/16/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly RO Reject

Collection Date: 10/11/2016 11:00:00 AM

Lab ID: 1610613-001

Matrix: AQUEOUS

Received Date: 10/13/2016 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Vinyl chloride	ND	1.0		µg/L	1	10/14/2016 10:07:29 AM	R37973
Xylenes, Total	ND	1.5		µg/L	1	10/14/2016 10:07:29 AM	R37973
Surr: 1,2-Dichloroethane-d4	96.3	70-130		%Rec	1	10/14/2016 10:07:29 AM	R37973
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	10/14/2016 10:07:29 AM	R37973
Surr: Dibromofluoromethane	103	70-130		%Rec	1	10/14/2016 10:07:29 AM	R37973
Surr: Toluene-d8	97.8	70-130		%Rec	1	10/14/2016 10:07:29 AM	R37973
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	10/18/2016	28115

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1610613

Date Reported: 11/16/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Quarterly RO Reject

Collection Date:

Lab ID: 1610613-002

Matrix: TRIP BLANK

Received Date: 10/13/2016 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/17/2016 5:07:17 PM	28082
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Toluene	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Ethylbenzene	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Carbon Tetrachloride	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Chloroform	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,1-Dichloroethane	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,1-Dichloroethene	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Methylene Chloride	ND	3.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Vinyl chloride	ND	1.0		µg/L	1	10/14/2016 11:33:59 AM	R37973
Xylenes, Total	ND	1.5		µg/L	1	10/14/2016 11:33:59 AM	R37973
Surr: 1,2-Dichloroethane-d4	93.1	70-130		%Rec	1	10/14/2016 11:33:59 AM	R37973
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	10/14/2016 11:33:59 AM	R37973
Surr: Dibromofluoromethane	98.5	70-130		%Rec	1	10/14/2016 11:33:59 AM	R37973
Surr: Toluene-d8	104	70-130		%Rec	1	10/14/2016 11:33:59 AM	R37973

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B38141		RunNo: 38141							
Prep Date:	Analysis Date: 10/21/2016		SeqNo: 1190207		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B38141		RunNo: 38141							
Prep Date:	Analysis Date: 10/21/2016		SeqNo: 1190211		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0026	0.0020	0.002000	0	130	50	150			
Boron	0.040	0.040	0.04000	0	101	50	150			
Cadmium	ND	0.0020	0.002000	0	84.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	0.0064	0.0060	0.006000	0	106	50	150			
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Molybdenum	ND	0.0080	0.008000	0	97.5	50	150			
Nickel	ND	0.010	0.005000	0	96.6	50	150			
Silver	ND	0.0050	0.005000	0	99.4	50	150			
Zinc	ND	0.010	0.005000	0	105	50	150			

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B38141		RunNo: 38141							
Prep Date:	Analysis Date: 10/21/2016		SeqNo: 1190212		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	101	85	115			
Boron	0.53	0.040	0.5000	0	106	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.8	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			
Molybdenum	0.53	0.0080	0.5000	0	105	85	115			
Nickel	0.48	0.010	0.5000	0	96.3	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	LCS-B		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: B38141			RunNo: 38141				
Prep Date:			Analysis Date: 10/21/2016			SeqNo: 1190212		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	99.9	85	115			
Zinc	0.49	0.010	0.5000	0	97.9	85	115			

Sample ID	MB-A		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: A38197		RunNo: 38197					
Prep Date:			Analysis Date: 10/25/2016		SeqNo: 1192092		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Copper	ND	0.0060								
Iron	ND	0.020								

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A38197		RunNo: 38197					
Prep Date:			Analysis Date: 10/25/2016		SeqNo: 1192093		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	114	85	115			
Copper	0.49	0.0060	0.5000	0	97.8	85	115			
Iron	0.50	0.020	0.5000	0	99.1	85	115			

Sample ID	LLCS-A			SampType:	LCSLL			TestCode: EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC			Batch ID:	A38197			RunNo: 38197			
Prep Date:				Analysis Date:	10/25/2016			SeqNo: 1192094		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aluminum	ND	0.020	0.01000	0	123	50	150				
Copper	0.0064	0.0060	0.006000	0	106	50	150				
Iron	0.021	0.020	0.02000	0	107	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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B38214		RunNo: 38214					
Prep Date:			Analysis Date: 10/25/2016		SeqNo: 1192768		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	95.6	85	115			
Selenium	0.025	0.0010	0.02500	0	99.1	85	115			
Uranium	0.012	0.00050	0.01250	0	96.0	85	115			

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B38214			RunNo: 38214					
Prep Date:		Analysis Date: 10/25/2016			SeqNo: 1192770			Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	101	50	150			
Selenium	0.0011	0.0010	0.001000	0	113	50	150			
Uranium	ND	0.00050	0.0005000	0	97.5	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B38214			RunNo: 38214					
Prep Date:		Analysis Date: 10/25/2016			SeqNo: 1192772		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	A38300		RunNo:	38300				
Prep Date:			Analysis Date:	10/28/2016		SeqNo:	1195760		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	98.3	85	115				

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID:	A38300		RunNo:	38300				
Prep Date:			Analysis Date:	10/28/2016		SeqNo:	1195761	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	0.0010	0.001000	0	99.2	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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	A38300	RunNo:	38300					
Prep Date:		Analysis Date:	10/28/2016	SeqNo:	1195762	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-28201	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	28201	RunNo:	38122					
Prep Date:	10/20/2016	Analysis Date:	10/21/2016	SeqNo:	1189575	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-28201	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	28201	RunNo:	38122					
Prep Date:	10/20/2016	Analysis Date:	10/21/2016	SeqNo:	1189576	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	97.4	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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R37942	RunNo:	37942					
Prep Date:		Analysis Date:	10/13/2016	SeqNo:	1182401	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R37942	RunNo:	37942					
Prep Date:		Analysis Date:	10/13/2016	SeqNo:	1182402	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	107	90	110			
Chloride	4.7	0.50	5.000	0	93.9	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.3	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R38212	RunNo:	38212					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192608	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R38212	RunNo:	38212					
Prep Date:		Analysis Date:	10/25/2016	SeqNo:	1192609	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.7	0.50	10.00	0	96.9	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-28082		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	28082		RunNo:	37992				
Prep Date:	10/17/2016		Analysis Date:	10/17/2016		SeqNo:	1183982		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-28082		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	28082		RunNo:	37992				
Prep Date:	10/17/2016		Analysis Date:	10/17/2016		SeqNo:	1183984		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.093	0.010	0.1000	0	93.2	70	130				

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	1610613-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject		Batch ID: 28063		RunNo: 37940					
Prep Date:	10/14/2016		Analysis Date: 10/14/2016		SeqNo: 1183256		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	79.6	148			
Surr: DNOP	0.51		0.5000		103	77.1	144			

Sample ID	1610613-001AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject		Batch ID: 28063		RunNo: 37940					
Prep Date:	10/14/2016		Analysis Date: 10/14/2016		SeqNo: 1183257		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	115	79.6	148	5.02	20	
Surr: DNOP	0.49		0.5000		98.6	77.1	144	0	0	

Sample ID	LCS-28063		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 28063		RunNo: 37940					
Prep Date:	10/14/2016		Analysis Date: 10/14/2016		SeqNo: 1183264		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	116	63.2	155			
Surr: DNOP	0.49		0.5000		97.8	77.1	144			

Sample ID	MB-28063		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 28063		RunNo: 37940					
Prep Date:	10/14/2016		Analysis Date: 10/14/2016		SeqNo: 1183265		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		114	77.1	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-28040		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 28040		RunNo: 38063					
Prep Date:	10/13/2016		Analysis Date: 10/18/2016		SeqNo: 1187392		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.7		2.500		110	26.1	140			
Surr: Tetrachloro-m-xylene	2.7		2.500		108	15	123			

Sample ID	LCS-28040		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 28040		RunNo: 38063					
Prep Date:	10/13/2016		Analysis Date: 10/18/2016		SeqNo: 1187408		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	5.2	1.0	5.000	0	103	15	147			
Aroclor 1260	5.2	1.0	5.000	0	105	15	200			
Surr: Decachlorobiphenyl	2.8		2.500		112	26.1	140			
Surr: Tetrachloro-m-xylene	2.8		2.500		112	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R37973		RunNo: 37973					
Prep Date:			Analysis Date: 10/14/2016		SeqNo: 1183336		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.7	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	78.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.1	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID	1610613-001bms		SampType: MS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	R.O. Reject		Batch ID: R37973		RunNo: 37973					
Prep Date:			Analysis Date: 10/14/2016		SeqNo: 1183339		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.2	70	130			
Toluene	19	1.0	20.00	0	97.4	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	88.0	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	77.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.3	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	1610613-001bmsd		SampType: MSD		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	R.O. Reject		Batch ID: R37973		RunNo: 37973					
Prep Date:			Analysis Date: 10/14/2016		SeqNo: 1183340		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.0	70	130	1.25	20	
Toluene	18	1.0	20.00	0	92.4	70	130	5.28	20	
1,1-Dichloroethene	17	1.0	20.00	0	86.1	70	130	2.18	20	
Trichloroethene (TCE)	15	1.0	20.00	0	76.1	70	130	2.11	20	
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130	0	0	
Surr: Dibromofluoromethane	9.9		10.00		98.9	70	130	0	0	
Surr: Toluene-d8	9.7		10.00		97.3	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R37973	RunNo:	37973					
Prep Date:		Analysis Date:	10/14/2016	SeqNo:	1183360	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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.9		10.00		99.2	70	130			

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-28041		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	28041		RunNo:	38100			
Prep Date:	10/13/2016		Analysis Date:	10/20/2016		SeqNo:	1188744	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		64.1	20	153			

Sample ID	LCS-28041		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	28041		RunNo:	38100			
Prep Date:	10/13/2016		Analysis Date:	10/20/2016		SeqNo:	1188746	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	55.6	124			
1-Methylnaphthalene	82	2.0	80.20	0	102	55.3	124			
2-Methylnaphthalene	79	2.0	80.00	0	99.2	55.4	124			
Acenaphthylene	85	2.5	80.20	0	106	60.2	119			
Acenaphthene	81	2.0	80.00	0	101	56	126			
Fluorene	7.5	0.80	8.020	0	93.9	51.6	129			
Phenanthrene	3.4	0.60	4.020	0	84.6	58.8	129			
Anthracene	4.0	0.60	4.020	0	98.8	59.9	121			
Fluoranthene	7.4	0.30	8.020	0	92.4	48	145			
Pyrene	8.2	0.30	8.020	0	102	56.2	130			
Benz(a)anthracene	0.81	0.070	0.8020	0	101	50.4	142			
Chrysene	3.9	0.20	4.020	0	95.8	54.7	134			
Benzo(b)fluoranthene	0.93	0.10	1.002	0	92.8	61.8	120			
Benzo(k)fluoranthene	0.49	0.070	0.5000	0	98.0	55.9	134			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	LCS-28041		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 28041		RunNo: 38100					
Prep Date:	10/13/2016		Analysis Date: 10/20/2016		SeqNo: 1188746		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	51.3	137			
Dibenz(a,h)anthracene	0.98	0.12	1.002	0	97.8	57.8	134			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	100	57.2	134			
Indeno(1,2,3-cd)pyrene	2.2	0.25	2.004	0	108	58.2	137			
Surr: Benzo(e)pyrene	20		20.00		100	20	153			

Qualifiers:

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

B Analyte detected in the 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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-28115	SampType:	MBLK			TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW	Batch ID:	28115			RunNo:	38004				
Prep Date:	10/18/2016	Analysis Date:	10/18/2016			SeqNo:	1184471	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-28115		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 28115		RunNo: 38004					
Prep Date:	10/18/2016		Analysis Date: 10/18/2016		SeqNo: 1184472		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	109	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-R38749		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R38749		RunNo:	38749				
Prep Date:			Analysis Date:	10/19/2016		SeqNo:	1210509	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R38749		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R38749		RunNo: 38749					
Prep Date:			Analysis Date: 10/19/2016		SeqNo: 1210510		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.543		0.5000	0	109	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	1610613-001bms		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject		Batch ID: W38060		RunNo: 38060					
Prep Date:			Analysis Date: 10/20/2016		SeqNo: 1187259		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.8	53.8	128			
Surr: BFB	9.2		10.00		92.3	70	130			

Sample ID	1610613-001bmsd		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject		Batch ID: W38060		RunNo: 38060					
Prep Date:			Analysis Date: 10/20/2016		SeqNo: 1187260		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.0	53.8	128	10.6	20	
Surr: BFB	8.6		10.00		86.5	70	130	0	0	

Sample ID	rb		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: W38060		RunNo: 38060					
Prep Date:			Analysis Date: 10/19/2016		SeqNo: 1187443		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	8.9		10.00		88.8	70	130			

Sample ID	2.5ug gro lcs		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: W38060		RunNo: 38060					
Prep Date:			Analysis Date: 10/19/2016		SeqNo: 1188464		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	105	75.4	118			
Surr: BFB	9.3		10.00		93.3	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-R38749		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R38749		RunNo: 38749					
Prep Date:			Analysis Date: 11/16/2016		SeqNo: 1210512		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0	0.518								
Radium-226 ±	0.321	0.518								
Radium-228	0.2	0.627								
Radium-228 ±	0.292	0.627								

Qualifiers:

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

B Analyte detected in the 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#: 1610613

16-Nov-16

Client: Navajo Refining Company

Project: Quarterly RO Reject

Sample ID	MB-28134		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	28134		RunNo:	38086				
Prep Date:	10/18/2016		Analysis Date:	10/20/2016		SeqNo:	1188295		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-28134		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 28134		RunNo: 38086					
Prep Date:	10/18/2016		Analysis Date: 10/20/2016		SeqNo: 1188296		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	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

Sample Log-In Check List

Client Name: **NAVAJO-REFINING CO**

Wprk Order Number: **1610613**

RcptNo: **1**

Received by/date:

LC **10/13/16**

Logged By: **Ashley Gallegos**

10/13/2016 8:30:00 AM

AG

Completed By: **Ashley Gallegos**

10/13/2016 11:53:15 AM

AG

Reviewed By:

LC **10/13/16**

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° 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: **51**
(2 or 12 unless noted)
Adjusted? **NO**
Checked by: *AS*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☒ Level 4 (Full Validation)

☐ Other

☐ EDD (Type)

Sample Request ID

Matrix

Time

Container Type and #

Preservative Type

HEAL No

10101013

-001

10101013

10-11 10:00 liquid

R.O. Reject

2 - 500ml P

1-unpres H2SO4

X

8260B: WQCC List VOCs

8270C: WQCC list SVOCs

6010B: WQCC Metals

10-11 10:00 liquid

R.O. Reject

3-40ml VOA HCL

HNO3

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1-500ml P

HNO3

X

335.4: Total Cyanide

6010B: WQCC Metals

10-11 10:00 liquid

R.O. Reject

1-500ml P

NaOH

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

2-1L P

HNO3

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

3-40ml VOA

Na2S2O3

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

2 - 1L Glass unpres

unpres

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1 - 1L Glass unpres

unpres

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

3-40ml VOA HCL

HCL

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1-250ml Glass unpres

unpres

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1 - 1L Glass H2SO4

H2SO4

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

Trip Blank

2-40ml VOA HCL

HCL

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

Date: 10-12 11:00

Relinquished by: Brady Hubbard

Received by: Lindsey Cancha

Date: 10/13/16 0830

Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn

VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2,2-Trichloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride

SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

Date: 10-12 11:00

Relinquished by: Brady Hubbard

Received by: Lindsey Cancha

Date: 10/13/16 0830

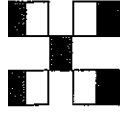
Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn

VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2,2-Trichloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride

SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Project Manager:

Robert Combs

Sampler: Brady Hubbard

On Ice: ☒ Yes ☐ No

Sample Temperature: 20

Container Type and #

Preservative Type

HEAL No

10101013

-001

10101013

10-11 10:00 liquid

R.O. Reject

2 - 500ml P

1-unpres H2SO4

X

8260B: WQCC List VOCs

8270C: WQCC list SVOCs

6010B: WQCC Metals

10-11 10:00 liquid

R.O. Reject

3-40ml VOA HCL

HNO3

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1-500ml P

HNO3

X

335.4: Total Cyanide

6010B: WQCC Metals

10-11 10:00 liquid

R.O. Reject

1-500ml P

NaOH

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

2-1L P

HNO3

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

3-40ml VOA

Na2S2O3

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

2 - 1L Glass unpres

unpres

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1 - 1L Glass unpres

unpres

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

3-40ml VOA HCL

HCL

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1-250ml Glass unpres

unpres

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

R.O. Reject

1 - 1L Glass H2SO4

H2SO4

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

10-11 10:00 liquid

Trip Blank

2-40ml VOA HCL

HCL

X

8082: PCBs

8015: GRO, DRO, ORO

7470: Mercury

Date: 10-12 11:00

Relinquished by: Brady Hubbard

Received by: Lindsey Cancha

Date: 10/13/16 0830

Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn

VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2,2-Trichloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride

SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, November 16, 2016 2:37 PM
To: 'Dade, Lewis (Randy)'; Griswold, Jim, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Marks, Allison, EMNRD; Bada, Cheryl, EMNRD
Subject: ACO WQA-OCD-CO-2015-002 RO Reject Water Discharge Monthly Report for October 2016

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and concurs with the Permittee's report.

In accordance with WQA-OCD-CO-2016-001, Section III Order, 1(a) ii & iii:

ii. After an alternative disposal method for the RO reject fluid stream has been selected, Navajo will promptly revise the permit renewal application for Discharge Permit GW-028 to incorporate a description of the alternative disposal method for the RO reject fluid stream, including a schedule for the installation and commencement of operation of the alternative disposal method.

iii. Navajo is authorized to continue land application of the RO reject fluid stream in accordance with the current terms of Discharge Permit GW-028 until such time as OCD approves a permit renewal application for Discharge Permit GW-028 that incorporates an alternative disposal method for the RO reject fluid stream. The parties intend that a permit renewal, which incorporates an alternative disposal method, will provide for the continuation of the current land application of the RO reject fluid until the alternative disposal method is operationally capable of accepting the waste stream.

The Permittee on October 21, 2016 selected the UIC Class I (Non-Hazardous) Disposal Well "WDW-4" and will be meeting with OCD on October 29, 2016 to address the schedule for installation and commencement of operation of the alternate disposal method.

Please contact me if you have questions. Thank you.

-----Original Message-----

From: Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]
Sent: Wednesday, November 16, 2016 12:07 PM
To: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: Emailing: OCT 2016 MONTHLY REPORT GW-028

Your message is ready to be sent with the following file or link attachments:

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

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November 15, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – October 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's October 2016 monthly report, for the period of October 1-31, 2016, under the Permit.

Specifically, this report covers the October 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical results of a discharge sample collected on October 11, 2016 in accordance with Condition 4.B.1 for the fourth calendar quarter. We are still waiting on lab results.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Per Mr. Chavez' request, the total discharge for the month is also shown in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the fourth quarter, samples were collected for the RO reject streams from the permanent units on October 11, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP).

On June 23, 2016, Navajo submitted an application to renew and modify Discharge Permit GW-028 in accordance with Condition 1.F of the Permit. Navajo received notification from OCD that the application was deemed administratively complete on July 28, 2016, and notification that the application was determined to be technically incomplete on September 9, 2016.

On October 21, 2016, in compliance with the requirements of WQA-OCD-CO-2013-001, Navajo notified OCD of the recommended alternative management of the RO Reject stream.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott M. Denton", with a stylized flourish at the end.

Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
10/1/2016	120.85	121.19	43.85	285.88	9,801.60
10/2/2016	123.33	121.61	44.95	289.89	9,939.09
10/3/2016	122.52	119.24	39.90	281.66	9,656.91
10/4/2016	122.89	120.11	42.41	285.41	9,785.49
10/5/2016	123.08	119.88	41.94	284.90	9,768.00
10/6/2016	123.25	120.72	43.43	287.40	9,853.71
10/7/2016	123.73	122.59	42.18	288.50	9,891.43
10/8/2016	126.33	123.99	47.82	298.14	10,221.94
10/9/2016	129.05	126.43	52.65	308.13	10,564.46
10/10/2016	129.21	125.56	50.49	305.26	10,466.06
10/11/2016	128.90	124.34	47.96	301.20	10,326.86
10/12/2016	129.30	123.40	46.25	298.95	10,249.71
10/13/2016	128.23	122.64	44.72	295.59	10,134.51
10/14/2016	122.93	123.29	45.72	291.94	10,009.37
10/15/2016	123.07	123.14	45.89	292.09	10,014.51
10/16/2016	121.08	121.87	43.35	286.29	9,815.66
10/17/2016	121.89	122.59	47.16	291.64	9,999.09
10/18/2016	121.88	121.42	44.68	287.98	9,873.60
10/19/2016	123.55	123.35	48.45	295.34	10,125.94
10/20/2016	123.60	123.53	48.39	295.52	10,132.11
10/21/2016	124.41	125.17	49.46	299.03	10,252.46
10/22/2016	124.54	125.54	50.29	300.37	10,298.40
10/23/2016	123.88	124.35	47.41	295.64	10,136.23
10/24/2016	124.23	124.82	48.58	297.64	10,204.80
10/25/2016	122.90	122.97	44.04	289.90	9,939.43
10/26/2016	123.77	124.18	46.65	294.60	10,100.57
10/27/2016	125.13	119.98	52.15	297.26	10,191.77
10/28/2016	137.25	0.08	136.10	273.43	9,374.74
10/29/2016	135.86	49.33	107.93	293.13	10,050.17
10/30/2016	129.12	142.56	49.82	321.49	11,022.51
10/31/2016	130.05	142.39	51.71	324.15	11,113.71
TOTAL (bbls/month)					313,314.86

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 18, 2016 11:29 AM
To: Dade, Lewis (Randy)
Cc: Holder, Mike (Mike.Holder@hollyfrontier.com)
Subject: ACO WQA-OCD-CO-2015-002 RO Reject Water Discharge Monthly Report for September 2016

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and concurs with the Permittee's report.

OCD recommends the Permittee add a "Total" row at the bottom of the flow rate measurements and calculated daily discharge value, since the data appears to be in spreadsheet form with the total calculated figures for the month depicted below each column for the month.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

"Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?" (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see "Publications")

**STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION
OIL CONSERVATION DIVISION**

IN THE MATTER OF

HollyFrontier Navajo Refining Company, LLC

No. WQA-OCD-CO-2016-001

AGREED COMPLIANCE ORDER

Pursuant to the New Mexico Water Quality Act, NMSA 1978, Section 74-6-1 through 74-6-17, as amended (“Act”), and the regulations promulgated under the Act, the Oil Conservation Commission and the Oil Conservation Division of the Energy, Minerals and Natural Resources Department of the State of New Mexico (together “OCD”) issue this Agreed Compliance Order (the “Order”) to HollyFrontier Navajo Refining Company LLC (“Navajo”), directing compliance with the Act, the Water Quality Control Commission (“WQCC”) Regulations, and permits issued under the Act.

I. FINDINGS AND DETERMINATIONS

1. The Oil Conservation Commission is a “constituent agency” under the Act and is charged with administration and enforcement of the Act and regulations promulgated in accordance with the Act. NMSA 1978, Section 74-6-3(K). The Oil Conservation Division of the Energy, Minerals, and Natural Resources Department has concurrent authority with the Oil Conservation Commission. NMSA 1978, Section 70-2-6(B).
2. Navajo is a limited liability company doing business in New Mexico. Navajo is an active entity with a principal address of 501 East Main Street, Artesia, New Mexico 88210.
3. Navajo owns and operates a petroleum refinery located at 501 East Main Street, Artesia, New Mexico (“Facility”).
4. The WQCC has adopted regulations, pursuant to the Act, requiring permits for the discharge of fluids directly or indirectly into groundwater. Section 20.6.2.3106 NMAC. For

groundwater discharges at oil and gas operations, including refineries, the WQCC has delegated administration and enforcement of those regulations to OCD.

5. Pursuant to the Act and the WQCC Regulations, on August 22, 2012, OCD issued Discharge Permit GW-028 to Navajo for the discharge of reverse osmosis ("RO") reject fluid to the surface at two farms located at the Facility. During the course of the current permit term, there were several permit modifications including approvals of:

- a. Adjustment of the submittal date for the annual discharge permit report and the annual groundwater monitoring report from October 21st of each year to March 15th of each year.
- b. Installation of an Iron Co-precipitation ("ICP") Unit and a 100 gallon per minute ("gpm") Phillips 66 Selenium Reduction Technology ("SeRT®") Unit to reduce the concentration of selenium associated with stripped sour waters.
- c. Revising the deadline to cease land application of the RO reject fluid stream to October 21, 2016.
- d. Increasing the maximum discharge limit for the RO reject fluid stream to 15,000 barrels per day ("bpd") from 10,000 bpd due to the increased fresh water needs of the Refinery, resulting in the generation of increased RO reject fluids.
- e. Installation of a temporary RO unit to meet increased demands.
- f. Replacement of the temporary RO unit with a third permanent primary RO unit.

6. On June 23, 2016, Navajo submitted to OCD a permit renewal and modification application for Discharge Permit GW-028. That application is currently pending before OCD.

7. Consistent with the permit requirement to cease land application, Navajo is currently evaluating two alternative disposal options for the RO reject fluid stream. The first alternative disposal option would involve underground injection in a wastewater disposal well. Navajo is currently evaluating a number of technical issues regarding site location and the

technical feasibility of underground injection. The second alternative disposal option would involve the construction of evaporation ponds at the refinery site.

8. As a result of its ongoing efforts to promote water conservation and identify the best disposal options for the RO reject fluid stream, Navajo requires additional time beyond the current October 21, 2016 deadline to cease land application of the RO reject fluid stream included in Discharge Permit GW-028.

9. Navajo intends to make a decision between the two alternative disposal options for the RO reject fluid stream by October 21, 2016. At that time, Navajo intends to revise the permit renewal and modification application for Discharge Permit GW-028 to incorporate the selected disposal option.

II. CONCLUSIONS

1. OCD has jurisdiction over the parties and subject matter in this proceeding.
2. Navajo is a person as defined by NMSA 1978, Section 74-6-2.I.
3. Based on the facts presented above, the commitments made herein by Navajo, the company's history of compliance with OCD permits, the importance of the RO units to the ongoing operation of the Facility, and other relevant considerations, OCD has determined that Navajo need not be ordered to cease land application of the RO reject fluid stream during the period of this Order.

III. ORDER

1. Compliance Schedule.
 - a. Navajo shall take the actions and meet the schedule set forth below:
 - i. No later than October 21, 2016, Navajo will inform OCD in writing whether it has selected underground injection in a wastewater disposal

well or construction of evaporation ponds at the refinery site as an alternative disposal method for the RO reject fluid stream.

- ii. After an alternative disposal method for the RO reject fluid stream has been selected, Navajo will promptly revise the permit renewal application for Discharge Permit GW-028 to incorporate a description of the alternative disposal method for the RO reject fluid stream, including a schedule for the installation and commencement of operation of the alternative disposal method.
- iii. Navajo is authorized to continue land application of the RO reject fluid stream in accordance with the current terms of Discharge Permit GW-028 until such time as OCD approves a permit renewal application for Discharge Permit GW-028 that incorporates an alternative disposal method for the RO reject fluid stream. The parties intend that a permit renewal, which incorporates an alternative disposal method, will provide for the continuation of the current land application of the RO reject fluid until the alternative disposal method is operationally capable of accepting the waste stream.

b. Except where otherwise modified or extended pursuant to Section IV, Paragraph 1, Navajo's obligation to comply with this Order shall be deferred only to the extent and only for the duration that the failure in compliance is caused by "force majeure." For purposes of this Order, "force majeure" is defined as an event or set of circumstances which are beyond Navajo's control and could not have been prevented by Navajo's reasonable action or due diligence, including any delay in required approvals, issuance of any necessary permits or

similar items. "Force majeure" shall not apply to any failure in compliance due to increased costs or Navajo's financial inability to carry out this Order. Navajo shall promptly notify OCD of any force majeure event that has resulted in or will result in the inability of Navajo to comply with any obligation under this Order and shall provide OCD with a schedule for completing the obligations.

c. All reports, notifications and other submittals required under this Order shall be sent to OCD at the following address:

Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505
Re: WQA-OCD-CO-2016-001
email: jim.griswold@state.nm.us
carlj.chavez@state.nm.us

All such submittals shall be made electronically. Written amendment to this Order is not required for a change in the e-mail addresses specified above, and any such change in addresses may be made by e-mail.

2. Civil Penalties

a. Navajo shall pay stipulated penalties in the amount of \$1,000 per day if Navajo fails to timely submit any report or notification as required in Section III, Paragraph 1, unless the deadline is extended under Section IV, Paragraph 1.

b. Stipulated penalties shall be due thirty (30) days after the OCD makes a written demand for payment of stipulated penalties. Payments shall be by corporate check, certified check, or other guaranteed negotiable instrument made payable to the "State of New Mexico – General Fund", and shall be sent to the following address:

Director, Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive

IV. OTHER TERMS AND CONDITIONS

1. Termination, Modification and Extension

a. Navajo and OCD have the right to modify or terminate this Order by written instrument signed by both parties.

b. This Order will terminate when OCD takes final action to approve a renewal application for Discharge Permit GW-028.

c. OCD may grant an extension of any deadline to perform any activity required pursuant to this Order. Navajo shall submit all requests for an extension of a deadline in writing to OCD. The request shall propose a new deadline for the activity and shall include the basis for the request. OCD shall respond in writing by approving, approving in part or denying the request as soon as possible, but no later than fifteen (15) days after receipt. If OCD approves in part or denies the request, the response shall specify the reasons for OCD's actions.

2. By signing this Order, Navajo expressly:

a. acknowledges the authority of OCD to render the above Findings and Determinations, Conclusions, and Order;

b. agrees to comply with the Order;

c. waives any right, pursuant to the Act or otherwise, to a hearing either prior or subsequent to the entry of this Order or to an appeal from this Order; and

d. agrees that if it fails to comply with this Order, the Order may be enforced by suit or otherwise to the same extent and with the same effect as a final Order entered after notice and hearing in accordance with all terms of the Act.


3. Nothing in this Order relieves Navajo of its liability should its operations fail to adequately investigate and remediate contamination that poses a threat to ground water, surface water, human health, or the environment. In addition, nothing in this Order relieves Navajo of its responsibility for compliance with any federal, state, or local laws and/or regulations, including all other obligations under the Permit.

4. This Order may be executed in any number of counterparts (whether by facsimile, PDF, or original), each of which will be deemed to be an original and all of which together will constitute the same instrument.

5. This Order shall become effective on the date it is approved and signed by the Chair of the Oil Conservation Commission and the Director of the Oil Conservation Division.

Done at Santa Fe, New Mexico this ^{23rd} ~~th~~ day of September, 2016.

ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION
OIL CONSERVATION DIVISION

By: 
Name: David Catanach

Title: Chair, Oil Conservation Commission
Director, Oil Conservation Division

ACCEPTANCE

HollyFrontier Navajo Refining Company, LLC hereby accepts the foregoing Amendment, and agrees to all of the terms and provisions as set forth in the Amendment,

HollyFrontier Navajo Refining Company, LLC

By: Robert K. O'Brien
Name: ROBERT K. O'BRIEN

Title: Vice President and Refinery Manager

Date: 9/23/16

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, September 20, 2016 12:29 PM
To: Dade, Lewis (Randy)
Cc: Griswold, Jim, EMNRD; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: ACO WQA-OCD-CO-2015-002 RO Reject Water Discharge Monthly Report for August 2016

Randy:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and concurs with the Permittee's report.

OCD recommends the Permittee add a "Total" row at the bottom of the flow rate measurements and calculated daily discharge value, since the data appears to be in spreadsheet form with the total calculated figures for the month depicted below each column for the month.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

"Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?" (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see "Publications")

Chavez, Carl J, EMNRD

From: noreply@hollyfrontier.com
Sent: Tuesday, September 20, 2016 12:17 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Subject: Message from KM_C754e
Attachments: SKM_C754e16092011150.pdf

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September 20, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – August 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's August 2016 monthly report, for the period of August 1-31, 2016, under the Permit.

Specifically, this report covers the August 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the third quarter, samples were collected for the RO reject streams from the permanent units on July 5, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results were provided in the report submitted on August 10, 2016, for the July 2016 reporting period.

On June 23, 2016, Navajo submitted an application to renew and modify Discharge Permit GW-028 in accordance with Condition 1.F of the Permit. Navajo received notification from OCD that the application was deemed administratively complete on July 28, 2016, and notification that the application was determined to be technically incomplete on September 9, 2016.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott M. Denton", written over a horizontal line.

Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	
	GPM	GPM	GPM	GPM	BBL/DAY
	SOUTH	NORTH	MIDDLE		
8/1/2016	122.08	0.10	139.14	261.32	8959.54
8/2/2016	122.08	0.10	139.06	261.24	8956.80
8/3/2016	121.98	0.11	139.05	261.14	8953.37
8/4/2016	124.36	0.11	139.15	263.62	9038.40
8/5/2016	123.72	0.11	140.09	263.92	9048.69
8/6/2016	140.39	0.11	139.88	280.38	9613.03
8/7/2016	150.98	0.11	139.11	290.20	9949.71
8/8/2016	130.61	0.11	138.82	269.54	9241.37
8/9/2016	130.45	0.11	138.94	269.50	9240.00
8/10/2016	128.82	0.10	137.92	266.84	9148.80
8/11/2016	71.70	52.27	137.43	261.40	8962.29
8/12/2016	95.15	39.07	136.71	270.93	9289.03
8/13/2016	128.13	24.16	136.65	288.94	9906.51
8/14/2016	121.82	89.92	135.43	347.17	11902.97
8/15/2016	136.59	85.89	134.28	356.76	12231.77
8/16/2016	122.32	101.64	102.87	326.83	11205.60
8/17/2016	100.33	147.54	27.54	275.41	9442.63
8/18/2016	64.75	145.21	27.59	237.55	8144.57
8/19/2016	182.13	146.55	21.46	350.14	12004.80
8/20/2016	145.31	138.45	21.30	305.06	10459.20
8/21/2016	129.21	133.80	12.74	275.75	9454.29
8/22/2016	129.15	134.36	10.59	274.10	9397.71
8/23/2016	131.21	134.33	7.27	272.81	9353.49
8/24/2016	133.92	134.75	0.03	268.70	9212.57
8/25/2016	136.09	136.71	0.02	272.82	9353.83
8/26/2016	69.02	137.10	64.66	270.78	9283.89
8/27/2016	0.02	139.63	131.10	270.75	9282.86
8/28/2016	20.20	123.66	130.20	274.06	9396.34
8/29/2016	122.71	36.23	129.44	288.38	9887.31
8/30/2016	132.68	0.12	131.07	263.87	9046.97
8/31/2016	132.14	0.08	130.57	262.79	9009.94

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 11, 2016 2:42 PM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); Griswold, Jim, EMNRD; Brancard, Bill, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Combs, Robert; Dade, Lewis (Randy)
Subject: RE: 2016-08-10 GW-028 Monthly Report_July 2016 Rpt Period.pdf

Scott:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report, and finds the report to be in order.

For clarification of HollyFrontier's report summary, OCD received the application for discharge permit renewal dated June 20th for discharge permit renewal on June 21st. OCD issued its first public notice of the Administrative Completeness on July 28th and posted the letter, application and brief description of the application on its Website with notification to stakeholders.

OCD believes HollyFrontier is currently working to satisfy the 20.6.2.3108 NMAC public notice requirements and will provide affidavits of proof of public notice, etc. to OCD at the completion of its 30-day public notice process in accordance with the cited regulation above.

OCD is currently conducting a technical review of the application and concurrently working on its official public notice and final determination to post in newspapers of widespread and local distribution. OCD expects to post its determination on or before October 21st.

Please contact me if you have questions. Thank you.

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

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

From: Aguilar, Susie [mailto:Suzanne.Aguilar@HollyFrontier.com]
Sent: Wednesday, August 10, 2016 9:37 AM
To: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>
Subject: 2016-08-10 GW-028 Monthly Report_July 2016 Rpt Period.pdf

Submitted on behalf of Scott Denton. Hard copy mailed to addressee only.

Susie Aguilar
Environmental Administrative Assistant, Lead
Holly Frontier Navajo Refining LLC
501 E. Main Street / P.O. Box 159
Artesia, NM 88210 / 88211-0159
Office: (575) 746-5488
Fax: (575) 746-5451
Email: Suzanne.Aguilar@HollyFrontier.com

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August 10, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – July 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's July 2016 monthly report, for the period of July 1-31, 2016, under the Permit.

Specifically, this report covers the July 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical results of a discharge sample collected on July 5, 2016 in accordance with Condition 4.B.1 for the third calendar quarter.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units on a daily basis. Daily discharge rates and volumes are provided in Attachment 1.

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the third quarter, samples were collected for the RO reject streams from the permanent units on July 5, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results are provided in Attachment 2.

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

On June 23, 2016, Navajo submitted an application to renew and modify Discharge Permit GW-028 in accordance with Condition 1.F of the Permit. Navajo received notification from OCD that the application was deemed administratively complete on July 28, 2016.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flowrates and Volumes
Attachment 2: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flowrates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)	BBL/DAY
	GPM	GPM	GPM	GPM	
	SOUTH	NORTH	MIDDLE		
7/1/2016	139.11	3.20	137.05	279.36	9578.06
7/2/2016	74.54	84.42	137.11	296.06	10150.63
7/3/2016	0.12	112.16	137.07	249.36	8549.49
7/4/2016	0.03	112.24	136.64	248.91	8534.06
7/5/2016	0.02	113.20	136.91	250.14	8576.23
7/6/2016	0.03	113.64	136.75	250.42	8585.83
7/7/2016	0.02	115.04	137.03	252.09	8643.09
7/8/2016	0.02	114.14	136.79	250.95	8604.00
7/9/2016	0.04	113.02	136.90	249.96	8570.06
7/10/2016	0.02	116.61	136.86	253.49	8691.09
7/11/2016	0.03	116.73	136.62	253.37	8686.97
7/12/2016	0.03	116.79	137.07	253.89	8704.80
7/13/2016	0.03	116.79	137.60	254.42	8722.97
7/14/2016	0.03	115.43	136.04	251.49	8622.51
7/15/2016	0.02	118.82	135.43	254.27	8717.83
7/16/2016	0.02	119.17	135.90	255.09	8745.94
7/17/2016	0.02	126.87	135.71	262.60	9003.43
7/18/2016	0.02	127.20	135.24	262.46	8998.63
7/19/2016	76.56	46.68	135.97	259.21	8887.20
7/20/2016	94.75	0.10	136.32	231.17	7925.83
7/21/2016	108.38	0.10	136.10	244.58	8385.60
7/22/2016	113.45	0.10	136.03	249.58	8557.03
7/23/2016	112.23	0.10	135.64	247.97	8501.83
7/24/2016	113.19	0.10	136.26	249.56	8556.34
7/25/2016	115.69	0.10	137.19	252.98	8673.60
7/26/2016	116.97	0.10	138.01	255.07	8745.26
7/27/2016	117.52	0.09	138.21	255.82	8770.97
7/28/2016	120.21	0.10	138.79	259.10	8883.43
7/29/2016	121.37	0.10	139.37	260.85	8943.43
7/30/2016	121.78	0.10	139.51	261.39	8961.94
7/31/2016	122.01	0.10	139.22	261.33	8959.89

Attachment 2
Analytical Lab Report



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

August 04, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1607298

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/7/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1607298

Date Reported: 8/4/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/5/2016 9:30:00 AM

Lab ID: 1607298-001

Matrix: AQUEOUS

Received Date: 7/7/2016 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	7/18/2016 7:46:42 PM	B35777
Lead	ND	0.00050		mg/L	1	7/15/2016 3:55:53 PM	C35755
Selenium	0.0084	0.0050		mg/L	5	7/18/2016 7:46:42 PM	B35777
Uranium	0.0069	0.00050		mg/L	1	7/15/2016 3:55:53 PM	C35755
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.1	0.776		pCi/L	1	8/3/2016	R36230
Radium-226 ±	0.646	0.776		pCi/L	1	8/3/2016	R36230
Radium-228	1.21	0.822		pCi/L	1	8/3/2016	R36230
Radium-228 ±	0.502	0.822		pCi/L	1	8/3/2016	R36230
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.3	0.10		mg/L	1	7/8/2016 1:40:32 AM	R35519
Chloride	390	10		mg/L	20	7/8/2016 1:52:57 AM	R35519
Sulfate	1700	50		mg/L	100	7/9/2016 12:09:50 AM	A35552
Nitrate+Nitrite as N	1.9	1.0		mg/L	5	7/8/2016 2:17:46 AM	R35519
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4120	20.0	*	mg/L	1	7/8/2016 4:07:00 PM	26273
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	7/19/2016	R36230
SM4500-H+B: PH							Analyst: JRR
pH	7.98	1.68	H	pH units	1	7/8/2016 3:31:19 PM	R35550
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	7/12/2016 11:49:34 AM	C35577
Barium	0.069	0.0020		mg/L	1	7/12/2016 11:49:34 AM	C35577
Boron	0.10	0.040		mg/L	1	7/12/2016 11:49:34 AM	C35577
Cadmium	ND	0.0020		mg/L	1	7/12/2016 11:49:34 AM	C35577
Chromium	ND	0.0060		mg/L	1	7/12/2016 11:49:34 AM	C35577
Cobalt	ND	0.0060		mg/L	1	7/12/2016 11:49:34 AM	C35577
Copper	ND	0.0060		mg/L	1	7/12/2016 11:49:34 AM	C35577
Iron	ND	0.020		mg/L	1	7/12/2016 11:49:34 AM	C35577
Manganese	ND	0.0020		mg/L	1	7/12/2016 11:49:34 AM	C35577
Molybdenum	0.0095	0.0080		mg/L	1	7/12/2016 11:49:34 AM	C35577
Nickel	ND	0.010		mg/L	1	7/12/2016 11:49:34 AM	C35577
Silver	ND	0.0050		mg/L	1	7/12/2016 11:49:34 AM	C35577
Zinc	0.048	0.010		mg/L	1	7/12/2016 11:49:34 AM	C35577
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	7/14/2016 1:04:47 PM	26380

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1607298

Date Reported: 8/4/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/5/2016 9:30:00 AM

Lab ID: 1607298-001

Matrix: AQUEOUS

Received Date: 7/7/2016 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	7/14/2016 4:13:40 PM	26391
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Aroclor 1221	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Aroclor 1232	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Aroclor 1242	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Aroclor 1248	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Aroclor 1254	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Aroclor 1260	ND	1.0		µg/L	1	7/12/2016 11:17:01 AM	26300
Surr: Decachlorobiphenyl	104	26.1-140		%Rec	1	7/12/2016 11:17:01 AM	26300
Surr: Tetrachloro-m-xylene	103	15-123		%Rec	1	7/12/2016 11:17:01 AM	26300
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/11/2016 4:26:11 PM	26318
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/11/2016 4:26:11 PM	26318
Surr: DNOP	117	77.1-144		%Rec	1	7/11/2016 4:26:11 PM	26318
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/7/2016 3:19:48 PM	A35501
Surr: BFB	92.1	66.4-120		%Rec	1	7/7/2016 3:19:48 PM	A35501
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	7/14/2016 3:06:07 PM	26301
1-Methylnaphthalene	ND	2.0		µg/L	1	7/14/2016 3:06:07 PM	26301
2-Methylnaphthalene	ND	2.0		µg/L	1	7/14/2016 3:06:07 PM	26301
Benzo(a)pyrene	ND	0.070		µg/L	1	7/14/2016 3:06:07 PM	26301
Surr: Benzo(e)pyrene	108	20-153		%Rec	1	7/14/2016 3:06:07 PM	26301
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Toluene	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Ethylbenzene	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Carbon Tetrachloride	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Chloroform	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
1,1-Dichloroethane	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
1,1-Dichloroethene	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Methylene Chloride	ND	3.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1607298

Date Reported: 8/4/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/5/2016 9:30:00 AM

Lab ID: 1607298-001

Matrix: AQUEOUS

Received Date: 7/7/2016 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Vinyl chloride	ND	1.0		µg/L	1	7/8/2016 8:56:29 PM	B35544
Xylenes, Total	ND	1.5		µg/L	1	7/8/2016 8:56:29 PM	B35544
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/8/2016 8:56:29 PM	B35544
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/8/2016 8:56:29 PM	B35544
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/8/2016 8:56:29 PM	B35544
Surr: Toluene-d8	95.8	70-130		%Rec	1	7/8/2016 8:56:29 PM	B35544
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	8/1/2016	26705

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1607298

Date Reported: 8/4/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1607298-002

Matrix: TRIP BLANK

Received Date: 7/7/2016 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	7/14/2016 4:29:16 PM	26391
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/7/2016 4:33:38 PM	A35501
Surr: BFB	91.0	66.4-120		%Rec	1	7/7/2016 4:33:38 PM	A35501
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Toluene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Ethylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Naphthalene	ND	2.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1-Methylnaphthalene	ND	4.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
2-Methylnaphthalene	ND	4.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Acetone	ND	10		µg/L	1	7/8/2016 9:25:02 PM	B35544
Bromobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Bromodichloromethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Bromoform	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Bromomethane	ND	3.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
2-Butanone	ND	10		µg/L	1	7/8/2016 9:25:02 PM	B35544
Carbon disulfide	ND	10		µg/L	1	7/8/2016 9:25:02 PM	B35544
Carbon Tetrachloride	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Chlorobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Chloroethane	ND	2.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Chloroform	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Chloromethane	ND	3.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
2-Chlorotoluene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
4-Chlorotoluene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
cis-1,2-DCE	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Dibromochloromethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Dibromomethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1607298

Date Reported: 8/4/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1607298-002

Matrix: TRIP BLANK

Received Date: 7/7/2016 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1-Dichloroethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1-Dichloroethene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2-Dichloropropane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,3-Dichloropropane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
2,2-Dichloropropane	ND	2.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1-Dichloropropene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Hexachlorobutadiene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
2-Hexanone	ND	10		µg/L	1	7/8/2016 9:25:02 PM	B35544
Isopropylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
4-Isopropyltoluene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
4-Methyl-2-pentanone	ND	10		µg/L	1	7/8/2016 9:25:02 PM	B35544
Methylene Chloride	ND	3.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
n-Butylbenzene	ND	3.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
n-Propylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
sec-Butylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Styrene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
tert-Butylbenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
trans-1,2-DCE	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Trichlorofluoromethane	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Vinyl chloride	ND	1.0		µg/L	1	7/8/2016 9:25:02 PM	B35544
Xylenes, Total	ND	1.5		µg/L	1	7/8/2016 9:25:02 PM	B35544
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/8/2016 9:25:02 PM	B35544
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	7/8/2016 9:25:02 PM	B35544
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/8/2016 9:25:02 PM	B35544
Surr: Toluene-d8	96.1	70-130		%Rec	1	7/8/2016 9:25:02 PM	B35544

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-C	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: C35577			RunNo: 35577					
Prep Date:		Analysis Date: 7/12/2016			SeqNo: 1101649		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS-C		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: C35577		RunNo: 35577					
Prep Date:			Analysis Date: 7/12/2016		SeqNo: 1101650		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	107	85	115			
Barium	0.48	0.0020	0.5000	0	96.1	85	115			
Boron	0.50	0.040	0.5000	0	99.4	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.49	0.0060	0.5000	0	97.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Copper	0.49	0.0060	0.5000	0	97.7	85	115			
Iron	0.47	0.020	0.5000	0	94.7	85	115			
Manganese	0.47	0.0020	0.5000	0	94.2	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.46	0.010	0.5000	0	92.6	85	115			
Silver	0.098	0.0050	0.1000	0	98.3	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Sample ID	LLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C35577		RunNo: 35577					
Prep Date:			Analysis Date: 7/12/2016		SeqNo: 1101651		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	116	50	150			
Barium	ND	0.0020	0.002000	0	94.0	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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS-C	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: C35577			RunNo: 35577					
Prep Date:	Analysis Date: 7/12/2016			SeqNo: 1101651		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.041	0.040	0.04000	0	102	50	150			
Cadmium	ND	0.0020	0.002000	0	95.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	ND	0.0060	0.006000	0	95.2	50	150			
Copper	0.0079	0.0060	0.006000	0	131	50	150			
Iron	ND	0.020	0.02000	0	99.7	50	150			
Manganese	ND	0.0020	0.002000	0	94.5	50	150			
Molybdenum	0.011	0.0080	0.008000	0	142	50	150			
Nickel	ND	0.010	0.005000	0	95.0	50	150			
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Zinc	ND	0.010	0.005000	0	96.8	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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: C35755		RunNo: 35755					
Prep Date:			Analysis Date: 7/15/2016		SeqNo: 1106254		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	96.1	85	115			
Uranium	0.012	0.00050	0.01250	0	96.5	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C35755		RunNo: 35755					
Prep Date:			Analysis Date: 7/15/2016		SeqNo: 1106256		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	96.1	50	150			
Uranium	ND	0.00050	0.0005000	0	96.2	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: C35755			RunNo: 35755					
Prep Date:		Analysis Date: 7/15/2016			SeqNo: 1106258		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B35777		RunNo: 35777					
Prep Date:			Analysis Date: 7/18/2016		SeqNo: 1107271		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.8	85	115			
Selenium	0.024	0.0010	0.02500	0	96.7	85	115			

Sample ID	LLLCS			SampType:	LCSLL			TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	BatchQC			Batch ID:	B35777			RunNo:	35777			
Prep Date:				Analysis Date:	7/18/2016			SeqNo:	1107272		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic	ND	0.0010	0.001000	0	95.3	50	150					
Selenium	0.0010	0.0010	0.001000	0	102	50	150					

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW		Batch ID: B35777		RunNo: 35777						
Prep Date:			Analysis Date: 7/18/2016		SeqNo: 1107273		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 | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	B35777		RunNo:	35777					
Prep Date:		Analysis Date:	7/18/2016		SeqNo:	1107273	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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample 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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-26380	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	26380	RunNo:	35712					
Prep Date:	7/13/2016	Analysis Date:	7/14/2016	SeqNo:	1104894	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-26380	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	26380	RunNo:	35712					
Prep Date:	7/13/2016	Analysis Date:	7/14/2016	SeqNo:	1104895	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R35519	RunNo:	35519					
Prep Date:		Analysis Date:	7/7/2016	SeqNo:	1099779	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R35519	RunNo:	35519					
Prep Date:		Analysis Date:	7/7/2016	SeqNo:	1099780	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	90	110			
Chloride	4.7	0.50	5.000	0	93.8	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.1	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A35552	RunNo:	35552					
Prep Date:		Analysis Date:	7/8/2016	SeqNo:	1100904	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A35552	RunNo:	35552					
Prep Date:		Analysis Date:	7/8/2016	SeqNo:	1100905	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.7	0.50	10.00	0	96.9	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-26391	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	26391	RunNo:	35717					
Prep Date:	7/14/2016	Analysis Date:	7/14/2016	SeqNo:	1105070	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-26391	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	26391	RunNo:	35717					
Prep Date:	7/14/2016	Analysis Date:	7/14/2016	SeqNo:	1105071	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	93.8	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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	1607298-001BMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject		Batch ID: 26318		RunNo: 35548					
Prep Date:	7/11/2016		Analysis Date: 7/11/2016		SeqNo: 1101307		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.6	1.0	5.000	0	91.7	59.4	160			
Surr: DNOP	0.53		0.5000		106	77.1	144			

Sample ID	1607298-001BMSD			SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range			
Client ID:	R.O. Reject			Batch ID:	26318		RunNo:	35548			
Prep Date:	7/11/2016		Analysis Date:	7/11/2016		SeqNo:	1101308		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	4.5	1.0	5.000	0	89.1	59.4	160	2.85	20		
Surr: DNOP	0.49		0.5000		97.7	77.1	144	0	0		

Sample ID	LCS-26318			SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range			
Client ID:	LCSW			Batch ID:	26318		RunNo:	35548			
Prep Date:	7/11/2016			Analysis Date:	7/11/2016		SeqNo:	1101310		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	4.0	1.0	5.000	0	79.7	71.3	139				
Surr: DNOP	0.44		0.5000		88.9	77.1	144				

Sample ID	MB-26318	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW	Batch ID:	26318		RunNo:	35548				
Prep Date:	7/11/2016	Analysis Date:	7/11/2016		SeqNo:	1101311	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	0.99		1.000		98.7	77.1	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A35501	RunNo:	35501					
Prep Date:		Analysis Date:	7/7/2016	SeqNo:	1098949	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	66.4	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A35501	RunNo:	35501					
Prep Date:		Analysis Date:	7/7/2016	SeqNo:	1098950	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	106	80	120			
Surr: BFB	17		20.00		87.3	66.4	120			

Sample ID	1607298-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	A35501	RunNo:	35501					
Prep Date:		Analysis Date:	7/7/2016	SeqNo:	1098954	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	110	70	130			
Surr: BFB	19		20.00		96.5	66.4	120			

Sample ID	1607298-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	A35501	RunNo:	35501					
Prep Date:		Analysis Date:	7/7/2016	SeqNo:	1098955	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	108	70	130	2.24	20	
Surr: BFB	19		20.00		94.9	66.4	120	0	0	

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-26300		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 26300		RunNo: 35574					
Prep Date:	7/8/2016		Analysis Date: 7/12/2016		SeqNo: 1101522		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		82.8	26.1	140			
Surr: Tetrachloro-m-xylene	1.7		2.500		68.4	15	123			

Sample ID	LCS-26300		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 26300		RunNo: 35574					
Prep Date:	7/8/2016		Analysis Date: 7/12/2016		SeqNo: 1101523		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	62.6	15	147			
Aroclor 1260	5.2	1.0	5.000	0	104	15	200			
Surr: Decachlorobiphenyl	3.1		2.500		124	26.1	140			
Surr: Tetrachloro-m-xylene	2.7		2.500		109	15	123			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: B35544			RunNo: 35544					
Prep Date:		Analysis Date: 7/8/2016			SeqNo: 1100562		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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B35544	RunNo:	35544					
Prep Date:		Analysis Date:	7/8/2016	SeqNo:	1100562	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	9.8		10.00		98.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.6	70	130			
Surr: Toluene-d8	9.5		10.00		94.9	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	B35544	RunNo:	35544					
Prep Date:		Analysis Date:	7/8/2016	SeqNo:	1100565	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	20	1.0	20.00	0	99.1	70	130			
Chlorobenzene	19	1.0	20.00	0	93.6	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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B35544			RunNo: 35544					
Prep Date:		Analysis Date: 7/8/2016			SeqNo: 1100565		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	22	1.0	20.00	0	110	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.5		10.00		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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-26301		SampType: MBLK		TestCode: EPA Method 8310: PAHs					
Client ID:	PBW		Batch ID: 26301		RunNo: 35690					
Prep Date:	7/8/2016		Analysis Date: 7/14/2016		SeqNo: 1104212		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	15		20.00		74.1	20	153			

Sample ID	LCS-26301		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 26301		RunNo: 35690					
Prep Date:	7/8/2016		Analysis Date: 7/14/2016		SeqNo: 1104213		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	88.2	55.6	124			
1-Methylnaphthalene	67	2.0	80.20	0	84.0	55.3	124			
2-Methylnaphthalene	64	2.0	80.00	0	80.4	55.4	124			
Benzo(a)pyrene	0.42	0.070	0.5020	0	83.7	51.3	137			
Surr: Benzo(e)pyrene	14		20.00		71.6	20	153			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-26705	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	26705	RunNo:	36172					
Prep Date:	8/1/2016	Analysis Date:	8/1/2016	SeqNo:	1120184	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-26705	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	26705	RunNo:	36172					
Prep Date:	8/1/2016	Analysis Date:	8/1/2016	SeqNo:	1120185	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	19	2.5	20.00	0	96.7	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R36230	SampType:	MBLK	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	PBW	Batch ID:	R36230	RunNo:	36230					
Prep Date:		Analysis Date:	7/19/2016	SeqNo:	1122314	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	LCS-R36230	SampType:	LCS	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW	Batch ID:	R36230	RunNo:	36230					
Prep Date:		Analysis Date:	7/19/2016	SeqNo:	1122315	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.527		0.5000	0	105	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R36230	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R36230	RunNo:	36230					
Prep Date:		Analysis Date:	8/3/2016	SeqNo:	1122317	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.0741	0.971								
Radium-226 ±	0.482	0.971								
Radium-228	-0.0123	0.985								
Radium-228 ±	0.433	0.985								

Qualifiers:

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

B Analyte detected in the 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#: 1607298

04-Aug-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-26273	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	26273	RunNo:	35537					
Prep Date:	7/7/2016	Analysis Date:	7/8/2016	SeqNo:	1100261	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-26273	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	26273	RunNo:	35537					
Prep Date:	7/7/2016	Analysis Date:	7/8/2016	SeqNo:	1100262	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1607298

RcptNo: 1

Received by/date:	AS	07/07/16
Logged By:	Lindsay Mangin	7/7/2016 10:15:00 AM
Completed By:	Lindsay Mangin	7/7/2016 12:06:14 PM
Reviewed By:	AS	7/7/16

Chain of Custody

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

Log In

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

of preserved bottles checked for pH: 6/1
(<2 or <12 unless noted)
Adjusted? No
Checked by: [Signature]

Special Handling (if applicable)

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

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

- 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			



July 15, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – June 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's June 2016 monthly report, for the period of June 1-30, 2016, under the Permit.

Specifically, in accordance with Condition 4.B.7, this report covers the June 2016 reporting period and includes the daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4. Analytical data collected in accordance with Condition 4.B.1 for the second quarter of 2016 was provided in previous monthly reports.

Analytical results of a discharge sample collected on April 5, 2016, in accordance with Condition 4.B.1 for the second calendar quarter were included in the April report. Questions regarding the analytical results for the April 5 sample prompted re-sampling on May 19, 2016. A revised analytical report for the April 5 sample and an analytical report for follow up samples collected on May 19, 2016, were provided in the May monthly report submitted on June 2016.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units and the temporary RO unit on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. Note that a third permanent unit was installed to replace the temporary RO unit as authorized by OCD on April 1, 2016. The third permanent unit began operation in May 2016. Operation of the temporary RO unit ceased on June 1.

Separately, on June 23, 2016, Navajo submitted an application to renew and modify Discharge Permit GW-028. This application was submitted in accordance with Condition 1.F of the Permit.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units					Temporary Unit		Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH	MIDDLE					
6/1/2016	141.11	0.23	135.98	277.31	9,507.77	27	924	10,431.77
6/2/2016	139.41	0.74	136.77	276.92	9,494.40	0	0	9,494.40
6/3/2016	137.39	1.92	137.35	276.65	9,485.14	0	0	9,485.14
6/4/2016	141.17	0.58	136.36	278.11	9,535.20	0	0	9,535.20
6/5/2016	139.90	1.72	136.80	278.43	9,546.17	0	0	9,546.17
6/6/2016	140.35	2.30	136.73	279.38	9,578.74	0	0	9,578.74
6/7/2016	153.48	0.54	136.19	290.22	9,950.40	0	0	9,950.40
6/8/2016	153.74	0.10	135.62	289.46	9,924.34	0	0	9,924.34
6/9/2016	154.15	0.14	135.68	289.97	9,941.83	0	0	9,941.83
6/10/2016	154.55	0.17	135.63	290.35	9,954.86	0	0	9,954.86
6/11/2016	153.35	0.09	135.74	289.19	9,915.09	0	0	9,915.09
6/12/2016	154.64	0.40	136.03	291.07	9,979.54	0	0	9,979.54
6/13/2016	155.23	0.25	135.81	291.29	9,987.09	0	0	9,987.09
6/14/2016	155.22	0.30	135.19	290.72	9,967.54	0	0	9,967.54
6/15/2016	154.59	0.20	135.68	290.47	9,958.97	0	0	9,958.97
6/16/2016	144.65	2.15	136.14	282.94	9,700.80	0	0	9,700.80
6/17/2016	138.49	4.34	136.63	279.46	9,581.49	0	0	9,581.49
6/18/2016	141.24	6.44	136.16	283.84	9,731.66	0	0	9,731.66
6/19/2016	141.61	3.74	135.89	281.24	9,642.51	0	0	9,642.51
6/20/2016	138.93	2.01	135.71	276.66	9,485.49	0	0	9,485.49
6/21/2016	137.59	4.00	136.68	278.27	9,540.69	0	0	9,540.69
6/22/2016	135.87	6.67	138.00	280.54	9,618.51	0	0	9,618.51
6/23/2016	135.10	7.42	137.83	280.35	9,612.00	0	0	9,612.00
6/24/2016	139.11	3.20	137.05	279.36	9,578.06	0	0	9,578.06
6/25/2016	74.54	84.42	137.11	296.06	10,150.63	0	0	10,150.63
6/26/2016	141.61	3.74	135.89	281.24	9,642.51	0	0	9,642.51
6/27/2016	138.93	2.01	135.71	276.66	9,485.49	0	0	9,485.49
6/28/2016	137.59	4.00	136.68	278.27	9,540.69	0	0	9,540.69
6/29/2016	135.87	6.67	138.00	280.54	9,618.51	0	0	9,618.51
6/30/2016	135.10	7.42	137.83	280.35	9,612.00	0	0	9,612.00

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, June 22, 2016 12:01 PM
To: 'Combs, Robert'; Griswold, Jim, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: RE: May RO Reject Monthly Report

Robert, et al.:

The New Mexico Oil Conservation Division (OCD) is in receipt of the above subject monthly report.

OCD has reviewed the resample results from April, and the subsequent sampling data with letter from Andy Freeman (Hall Environmental) with explanation for organics detection, and are satisfied with HollyFrontier's response.

Please contact me if you have questions. Thank you.

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

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

From: Combs, Robert [mailto:Robert.Combs@HollyFrontier.com]
Sent: Wednesday, June 15, 2016 3:55 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Cc: McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Subject: May RO Reject Monthly Report

Jim & Carl,

Attached is the monthly report for the month of May concerning the RO Reject, as required by the GW-028 condition 4.B.7. Also provided is the response to your email from May 18, 2016 regarding detection of DRO in the RO Reject analytical reports submitted in the April 2016 report. This report will be mailed today.

Please let me know if you have any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Wednesday, June 15, 2016 3:55 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: May RO Reject Monthly Report
Attachments: 2016-06-15 GW-028 Monthly Report May 2016 Rpt Period.pdf

Jim & Carl,

Attached is the monthly report for the month of May concerning the RO Reject, as required by the GW-028 condition 4.B.7. Also provided is the response to your email from May 18, 2016 regarding detection of DRO in the RO Reject analytical reports submitted in the April 2016 report. This report will be mailed today.

Please let me know if you have any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
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June 15, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – May 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's May 2016 monthly report, for the period of May 1-31, 2016, under the Permit.

Specifically, this report covers the May 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical results of a discharge sample collected on May 19, 2016.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the three permanent RO units and the temporary RO unit on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. (Note that a third permanent unit was installed to replace the temporary RO unit as authorized by OCD on April 1, 2016. The third permanent unit began operation in May 2016. The temporary RO unit operated through May 2016 during transition to the new permanent unit operations. Operation of the temporary unit ceased on June 1.)

Samples were collected for the RO reject streams from the permanent units and temporary unit on May 19, 2016, as requested by OCD in an electronic mail dated May 18, 2016. In the April 2016 analytical report for samples collected on April 5, 2016, low concentrations of DRO were reported

for both the permanent and temporary RO reject samples. OCD required immediate resampling and analysis of RO Reject water utilizing EPA Method 8015 (GRO/MRO/ORO) and EPA Method 8260 (volatiles).

The Refinery contacted the lab and they reanalyzed the sample collected on April 5, 2016 and provided a revised report and explanation of the problem. The laboratory's research of the situation concluded that the analyst made an error in the placement of Navajo's samples on the autosampler and two different samples were analyzed in place of Navajo's RO reject samples. The lab re-analyzed the April 5, 2016 samples, and DRO was not detected. Copies of the revised analytical reports and the correspondence from OCD and the laboratory regarding this error are provided in Attachment 2.

The samples collected on May 19, 2016, were analyzed for EPA methods 8015D, 8260, 8011/504.1, and 200.7/200.8 (dissolved metals); please see attached lab reports. The corresponding analytical results are provided in Attachment 3. Neither DRO nor other organic constituents were detected in the samples.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates

Attachment 2: Revised Analytical Lab Report and OCD and Laboratory Correspondence
(May 2016)

Attachment 3: Analytical Lab Report (May 2016)

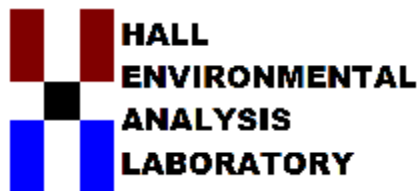
cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units					Temporary Unit		Daily Discharge Volume
	Metered Data			Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		
	GPM	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	SOUTH	NORTH	MIDDLE					
5/1/2016	77.25	83.24	No Data	160.49	5,503	134	4580	10,083
5/2/2016	84.59	91.23	No Data	175.82	6,028	139	4769	10,797
5/3/2016	83.69	58.25	No Data	141.93	4,866	140	4811	9,677
5/4/2016	79.80	66.86	No Data	146.66	5,028	143	4906	9,934
5/5/2016	79.78	66.90	No Data	146.69	5,029	143	4893	9,922
5/6/2016	79.50	62.75	No Data	142.26	4,877	126	4319	9,196
5/7/2016	0.01	58.19	No Data	58.20	1,995	123	4202	6,197
5/8/2016	0.01	55.92	No Data	55.92	1,917	143	4905	6,822
5/9/2016	0.01	98.00	No Data	98.01	3,360	146	5022	8,382
5/10/2016	92.27	80.45	No Data	172.72	5,922	151	5175	11,097
5/11/2016	100.14	82.17	No Data	182.32	6,251	151	5179	11,430
5/12/2016	99.31	54.91	No Data	154.22	5,288	150	5154	10,442
5/13/2016	100.12	0.08	140.34	240.54	8,247	136	4650	12,897
5/14/2016	100.53	0.08	141.45	242.06	8,299	140	4798	13,097
5/15/2016	109.01	0.06	142.63	251.70	8,630	115	3943	12,573
5/16/2016	107.11	0.06	138.23	245.40	8,414	75	2581	10,995
5/17/2016	0.01	124.05	140.01	264.08	9,054	98	3367	12,421
5/18/2016	0.00	116.74	140.43	257.17	8,817	142	4855	13,672
5/19/2016	0.00	128.71	143.01	271.72	9,316	149	5125	14,441
5/20/2016	0.00	115.88	137.97	253.85	8,703	150	5136	13,839
5/21/2016	0.01	122.29	141.17	263.48	9,034	151	5181	14,215
5/22/2016	0.02	117.79	141.05	258.85	8,875	149	5113	13,988
5/23/2016	0.02	117.55	140.89	258.45	8,861	125	4293	13,154
5/24/2016	89.57	33.87	140.79	264.23	9,059	123	4228	13,287
5/25/2016	124.18	0.09	141.23	265.50	9,103	92	3154	12,257
5/26/2016	43.69	91.42	140.37	275.48	9,445	153	5231	14,676
5/27/2016	63.72	77.70	138.02	279.44	9,581	109	3731	13,312
5/28/2016	137.83	2.34	137.36	277.54	9,516	84	2892	12,408
5/29/2016	134.71	0.07	136.38	271.17	9,297	76	2622	11,919
5/30/2016	135.68	0.06	137.13	272.87	9,356	87	2993	12,349
5/31/2016	136.72	0.11	136.29	273.11	9,364	110	3770	13,134

Attachment 2
Revised Analytical Lab Report (April 2016)
and OCD and Laboratory Correspondence



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

June 13, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly Temporary R.O. Reject

OrderNo.: 1604182

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/6/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued May 10, 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', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109



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

Case Narrative

WO#: 1604182
Date: 6/13/2016

CLIENT: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Analytical Notes Regarding EPA Method 8015 DRO/MRO:

The results for EPA Method 8015 DRO/MRO are being reported as past the holding time due to a laboratory error.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604182

Date Reported: 6/13/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Quarterly Temporary R.O. Reject

Collection Date: 4/5/2016 7:45:00 AM

Lab ID: 1604182-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	4/8/2016 2:24:54 PM	24682
EPA METHOD 8082: PCB'S								
Aroclor 1016	ND	0.28	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Aroclor 1221	ND	0.70	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Aroclor 1232	ND	0.76	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Aroclor 1242	ND	0.20	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Aroclor 1248	ND	0.57	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Aroclor 1254	ND	0.97	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Aroclor 1260	ND	0.24	1.0		µg/L	1	4/19/2016 2:04:17 AM	24708
Surr: Decachlorobiphenyl	106	0	26.1-140		%Rec	1	4/19/2016 2:04:17 AM	24708
Surr: Tetrachloro-m-xylene	74.4	0	15-123		%Rec	1	4/19/2016 2:04:17 AM	24708
EPA METHOD 8015M/D: DIESEL RANGE								
Diesel Range Organics (DRO)	ND	0.69	1.0	H	mg/L	1	5/27/2016 3:28:07 PM	24652
Motor Oil Range Organics (MRO)	ND	5.0	5.0	H	mg/L	1	5/27/2016 3:28:07 PM	24652
Surr: DNOP	92.1	0	70-141	H	%Rec	1	5/27/2016 3:28:07 PM	24652
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	4/8/2016 10:42:12 AM	R33412
Surr: BFB	84.7	0	49.5-130		%Rec	1	4/8/2016 10:42:12 AM	R33412
EPA METHOD 8310: PAHS								
Naphthalene	ND	1.1	2.0		µg/L	1	4/19/2016 11:01:30 AM	24709
1-Methylnaphthalene	ND	1.1	2.0		µg/L	1	4/19/2016 11:01:30 AM	24709
2-Methylnaphthalene	ND	1.1	2.0		µg/L	1	4/19/2016 11:01:30 AM	24709
Benzo(a)pyrene	ND	0.018	0.070		µg/L	1	4/19/2016 11:01:30 AM	24709
Surr: Benzo(e)pyrene	101	0	33.4-129		%Rec	1	4/19/2016 11:01:30 AM	24709
EPA METHOD 300.0: ANIONS								
Fluoride	1.9	0.023	0.10		mg/L	1	4/18/2016 10:02:35 PM	R33628
Chloride	55	0.55	10		mg/L	20	4/7/2016 5:15:57 AM	R33368
Nitrogen, Nitrite (As N)	ND	0.042	0.10		mg/L	1	4/7/2016 5:03:33 AM	R33368
Nitrogen, Nitrate (As N)	1.0	0.042	0.10		mg/L	1	4/7/2016 5:03:33 AM	R33368
Sulfate	880	3.2	25		mg/L	50	4/18/2016 10:15:00 PM	R33628
EPA METHOD 200.7: DISSOLVED METALS								
Aluminum	ND	0.0038	0.020		mg/L	1	4/18/2016 5:39:41 PM	A33606
Barium	0.040	0.0013	0.0020		mg/L	1	4/18/2016 5:39:41 PM	A33606
Boron	0.052	0.0011	0.040		mg/L	1	4/18/2016 5:39:41 PM	A33606
Cadmium	ND	0.00075	0.0020		mg/L	1	4/18/2016 5:39:41 PM	A33606
Chromium	ND	0.0018	0.0060		mg/L	1	4/18/2016 5:39:41 PM	A33606

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample 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 1604182

Date Reported: 6/13/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Quarterly Temporary R.O. Reject

Collection Date: 4/5/2016 7:45:00 AM

Lab ID: 1604182-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Cobalt	0.0010	0.00074	0.0060	J	mg/L	1	4/18/2016 5:39:41 PM	A33606
Copper	ND	0.0040	0.0060		mg/L	1	4/18/2016 5:39:41 PM	A33606
Iron	0.051	0.0091	0.020		mg/L	1	4/18/2016 5:39:41 PM	A33606
Manganese	0.0015	0.00032	0.0020	J	mg/L	1	4/18/2016 5:39:41 PM	A33606
Molybdenum	ND	0.0019	0.0080		mg/L	1	4/18/2016 5:39:41 PM	A33606
Nickel	ND	0.0024	0.010		mg/L	1	4/18/2016 5:39:41 PM	A33606
Silver	ND	0.0028	0.0050		mg/L	1	4/18/2016 5:39:41 PM	A33606
Zinc	0.032	0.0028	0.010		mg/L	1	4/18/2016 5:39:41 PM	A33606
EPA 200.8: DISSOLVED METALS							Analyst: JLF	
Arsenic	0.0014	0.00069	0.0050	J	mg/L	5	4/19/2016 6:16:53 PM	A33644
Lead	0.000082	0.000072	0.00050	J	mg/L	1	4/19/2016 2:29:28 PM	A33635
Selenium	0.0047	0.0011	0.0050	J	mg/L	5	4/20/2016 6:26:09 PM	A33677
Uranium	0.0029	0.000051	0.00050		mg/L	1	4/19/2016 2:29:28 PM	A33635
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	ND	0.000053	0.00020		mg/L	1	4/15/2016 11:59:33 AM	24817
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.096	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Toluene	ND	0.089	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Ethylbenzene	ND	0.11	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
1,2-Dichloroethane (EDC)	0.33	0.053	1.0	J	µg/L	1	4/14/2016 6:01:59 PM	R33550
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Chloroform	ND	0.089	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
1,1-Dichloroethene	ND	0.076	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Methylene Chloride	ND	0.063	3.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
1,1,2,2-Tetrachloroethane	ND	0.11	2.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
1,1,1-Trichloroethane	ND	0.063	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
1,1,2-Trichloroethane	ND	0.077	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Vinyl chloride	ND	0.063	1.0		µg/L	1	4/14/2016 6:01:59 PM	R33550
Xylenes, Total	ND	0.32	1.5		µg/L	1	4/14/2016 6:01:59 PM	R33550
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	4/14/2016 6:01:59 PM	R33550
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	4/14/2016 6:01:59 PM	R33550
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	4/14/2016 6:01:59 PM	R33550
Surr: Toluene-d8	103	0	70-130		%Rec	1	4/14/2016 6:01:59 PM	R33550

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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:** Navajo Refining Company**Client Sample ID:** Temporary R.O. Reject**Project:** Quarterly Temporary R.O. Reject**Collection Date:** 4/5/2016 7:45:00 AM**Lab ID:** 1604182-001**Matrix:** AQUEOUS**Received Date:** 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC	
Phenolics, Total Recoverable	ND	1.5	2.5		µg/L	1	4/21/2016	24923
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB	
Cyanide	ND	0.0100	0.0100		mg/L	1	4/8/2016	R34094
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB	
Radium-226	5.67	0.512	0.512		pCi/L	1	4/26/2016 7:54:00 PM	R34094
Radium-226 ±	2.13	0.512	0.512		pCi/L	1	4/26/2016 7:54:00 PM	R34094
Radium-228	0.76	0.949	0.949		pCi/L	1	4/26/2016 7:54:00 PM	R34094
Radium-228 ±	0.5	0.949	0.949		pCi/L	1	4/26/2016 7:54:00 PM	R34094
SM4500-H+B: PH							Analyst: MRA	
pH	8.26	0.100	1.68	H	pH units	1	4/9/2016 2:18:47 AM	R33424
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS	
Total Dissolved Solids	1870	10.5	20.0	*	mg/L	1	4/7/2016 3:22:00 PM	24656

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034060		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034061		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.46	0.020	0.5000	0	92.5	85	115			
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Boron	0.50	0.040	0.5000	0	99.1	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.2	85	115			
Copper	0.48	0.0060	0.5000	0	95.7	85	115			
Iron	0.47	0.020	0.5000	0	93.8	85	115			
Manganese	0.47	0.0020	0.5000	0	94.1	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.46	0.010	0.5000	0	91.9	85	115			
Silver	0.097	0.0050	0.1000	0	96.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.4	85	115			

Sample ID LLCS-A	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.010	0.020	0.01000	0	100	50	150			J
Barium	0.0019	0.0020	0.002000	0	94.5	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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	LLLCS-A		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A33606		RunNo: 33606					
Prep Date:			Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.038	0.040	0.04000	0	94.9	50	150			J
Cadmium	0.0028	0.0020	0.002000	0	140	50	150			
Chromium	0.0063	0.0060	0.006000	0	105	50	150			
Cobalt	0.0056	0.0060	0.006000	0	92.7	50	150			J
Copper	0.0090	0.0060	0.006000	0	150	50	150			S
Iron	0.020	0.020	0.02000	0	98.6	50	150			J
Manganese	0.0018	0.0020	0.002000	0	90.5	50	150			J
Molybdenum	0.0079	0.0080	0.008000	0	99.0	50	150			J
Nickel	0.0043	0.010	0.005000	0	86.2	50	150			J
Silver	0.0046	0.0050	0.005000	0	92.6	50	150			J
Zinc	0.0054	0.010	0.005000	0	108	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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A33635			RunNo: 33635						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1035657		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	100	85	115			
Uranium	0.012	0.00050	0.01250	0	97.5	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A33635			RunNo: 33635						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1035658		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Uranium	0.00049	0.00050	0.0005000	0	97.6	50	150			J

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A33635			RunNo: 33635						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1035659		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A33644			RunNo: 33644						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1036133		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	93.5	85	115			

Sample ID LCSLL	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A33644			RunNo: 33644						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1036134		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A33644			RunNo: 33644						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1036136		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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A33677			RunNo: 33677						
Prep Date:	Analysis Date: 4/20/2016			SeqNo: 1037321		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	97.2	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A33677			RunNo: 33677						
Prep Date:	Analysis Date: 4/20/2016			SeqNo: 1037322		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0011	0.0010	0.001000	0	106	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A33677			RunNo: 33677						
Prep Date:	Analysis Date: 4/20/2016			SeqNo: 1037323		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24817	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032804	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-24817	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032805	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R33368		RunNo: 33368							
Prep Date:	Analysis Date: 4/6/2016		SeqNo: 1025773		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R33368		RunNo: 33368							
Prep Date:	Analysis Date: 4/6/2016		SeqNo: 1025774		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	97.0	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R33628		RunNo: 33628							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1035257		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: R33628		RunNo: 33628							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1035258		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	109	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24682		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	24682		RunNo:	33411				
Prep Date:	4/7/2016		Analysis Date:	4/8/2016		SeqNo:	1027492		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-24682			SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB			
Client ID:	LCSW			Batch ID:	24682		RunNo:	33411			
Prep Date:	4/7/2016			Analysis Date:	4/8/2016		SeqNo:	1027494		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.12	0.010	0.1000	0	116	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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24652		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	24652		RunNo:	33385				
Prep Date:	4/6/2016		Analysis Date:	4/8/2016		SeqNo:	1026445		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		102	70	141				

Sample ID	LCS-24652		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026634		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Sample ID	LCS-25494		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 25494		RunNo: 34489					
Prep Date:	5/25/2016		Analysis Date: 5/26/2016		SeqNo: 1064130		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.50		0.5000		101	70	141			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027408	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	17		20.00		86.6	49.5	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027409	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	19		20.00		96.6	49.5	130			

Sample ID	1604182-001BMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Temporary R.O. Rej	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027412	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	70	130			
Surr: BFB	20		20.00		98.2	49.5	130			

Sample ID	1604182-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Temporary R.O. Rej	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027413	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.6	70	130	0.884	20	
Surr: BFB	20		20.00		99.5	49.5	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24708		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034347		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.5		2.500		99.2	26.1	140			
Surr: Tetrachloro-m-xylene	2.3		2.500		93.2	15	123			

Sample ID	LCS-24708		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034348		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	6.5	1.0	5.000	0	130	15	131			
Aroclor 1260	9.4	1.0	5.000	0	189	15	162			S
Surr: Decachlorobiphenyl	5.2		2.500		208	26.1	140			S
Surr: Tetrachloro-m-xylene	5.2		2.500		208	15	123			S

Sample ID	LCSD-24708	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	24708	RunNo:	33583					
Prep Date:	4/11/2016	Analysis Date:	4/18/2016	SeqNo:	1034349	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.5	1.0	5.000	0	70.0	15	131	60.1	24.4	R
Aroclor 1260	6.1	1.0	5.000	0	123	15	162	42.3	28	R
Surr: Decachlorobiphenyl	3.3		2.500		133	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	2.9		2.500		118	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R33550		RunNo: 33550							
Prep Date:	Analysis Date: 4/14/2016		SeqNo: 1032303		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	99.4	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.7	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	12		10.00		117	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R33550		RunNo: 33550							
Prep Date:	Analysis Date: 4/14/2016		SeqNo: 1032305		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								
1,2-Dichloroethane (EDC)	0.33	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	0.79	3.0								J
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	10		10.00		101	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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID MB-24709	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 24709		RunNo: 33614							
Prep Date: 4/11/2016	Analysis Date: 4/19/2016		SeqNo: 1034469		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	15		20.00		77.2	33.4	129			

Sample ID LCS-24709	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 24709		RunNo: 33614							
Prep Date: 4/11/2016	Analysis Date: 4/19/2016		SeqNo: 1034474		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	79	2.0	80.00	0	98.3	54.6	110			
1-Methylnaphthalene	80	2.0	80.20	0	99.9	49.1	116			
2-Methylnaphthalene	81	2.0	80.00	0	101	52.5	111			
Acenaphthylene	73	2.5	80.20	0	91.0	63.7	122			
Acenaphthene	81	2.0	80.00	0	101	50.6	114			
Fluorene	8.2	0.80	8.020	0	103	48.9	106			
Phenanthrene	4.0	0.60	4.020	0	98.5	54.7	110			
Anthracene	3.7	0.60	4.020	0	92.5	52	106			
Fluoranthene	8.7	0.30	8.020	0	109	57.8	113			
Pyrene	7.6	0.30	8.020	0	95.3	59.7	118			
Benz(a)anthracene	0.88	0.070	0.8020	0	110	56.6	109			S
Chrysene	4.1	0.20	4.020	0	102	57.6	110			
Benzo(b)fluoranthene	0.91	0.10	1.002	0	90.8	54.9	106			
Benzo(k)fluoranthene	0.51	0.070	0.5000	0	102	59.3	112			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID LCS-24709	SampType: LCS			TestCode: EPA Method 8310: PAHs						
Client ID: LCSW	Batch ID: 24709			RunNo: 33614						
Prep Date: 4/11/2016	Analysis Date: 4/19/2016			SeqNo: 1034474		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107			
Dibenz(a,h)anthracene	1.1	0.12	1.002	0	106	54.8	108			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	105	56.9	110			
Indeno(1,2,3-cd)pyrene	2.3	0.25	2.004	0	113	55.2	109			S
Surr: Benzo(e)pyrene	11		20.00		53.7	33.4	129			

Sample ID LCSD-24709	SampType: LCSD			TestCode: EPA Method 8310: PAHs						
Client ID: LCSS02	Batch ID: 24709			RunNo: 33614						
Prep Date: 4/11/2016	Analysis Date: 4/19/2016			SeqNo: 1034484		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	76	2.0	80.00	0	94.6	54.6	110	3.77	20	
1-Methylnaphthalene	74	2.0	80.20	0	92.8	49.1	116	7.35	20	
2-Methylnaphthalene	73	2.0	80.00	0	91.6	52.5	111	9.80	20	
Acenaphthylene	70	2.5	80.20	0	87.3	63.7	122	4.19	20	
Acenaphthene	73	2.0	80.00	0	91.4	50.6	114	10.4	20	
Fluorene	6.6	0.80	8.020	0	82.8	48.9	106	21.4	20	R
Phenanthrene	3.8	0.60	4.020	0	95.0	54.7	110	3.60	24	
Anthracene	3.6	0.60	4.020	0	88.6	52	106	4.40	20	
Fluoranthene	8.4	0.30	8.020	0	104	57.8	113	3.98	20.9	
Pyrene	7.3	0.30	8.020	0	91.5	59.7	118	4.01	20.8	
Benz(a)anthracene	0.85	0.070	0.8020	0	106	56.6	109	3.47	20	
Chrysene	4.0	0.20	4.020	0	98.8	57.6	110	3.47	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.9	106	5.65	20.6	
Benzo(k)fluoranthene	0.49	0.070	0.5000	0	98.0	59.3	112	4.00	20.8	
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107	3.85	20	
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	101	54.8	108	4.83	20	
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	100	56.9	110	4.88	20	
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109	7.78	20	
Surr: Benzo(e)pyrene	10		20.00		51.5	33.4	129	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24923		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 24923		RunNo: 33678					
Prep Date:	4/21/2016		Analysis Date: 4/21/2016		SeqNo: 1037376		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-24923		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 24923		RunNo: 33678					
Prep Date:	4/21/2016		Analysis Date: 4/21/2016		SeqNo: 1037377		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	89.0	64.4	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	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-R34094		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R34094		RunNo:	34094				
Prep Date:			Analysis Date:	4/8/2016		SeqNo:	1050918	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R34094		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R34094		RunNo: 34094					
Prep Date:			Analysis Date: 4/8/2016		SeqNo: 1050919		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.512		0.5000	0	102	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-R34094		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R34094		RunNo:	34094			
Prep Date:			Analysis Date:	4/26/2016		SeqNo:	1050921	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.965	0.799								
Radium-226 ±	0.644	0.799								
Radium-228	0.0941	0.772								
Radium-228 ±	0.341	0.772								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604182

13-Jun-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24656	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	24656	RunNo:	33372					
Prep Date:	4/6/2016	Analysis Date:	4/7/2016	SeqNo:	1025974	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-24656	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	24656	RunNo:	33372					
Prep Date:	4/6/2016	Analysis Date:	4/7/2016	SeqNo:	1025975	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1040	20.0	1000	0	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
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1604182

RcptNo: 1

Received by/date:

Am 04/06/16

Logged By: Ashley Gallegos

4/6/2016 9:40:00 AM

Ag

Completed By: Ashley Gallegos

4/6/2016 12:16:42 PM

Ag

Reviewed By:

Ag/SA 04/06/16

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? *as* Yes ☒ No ☒
9. Was preservative added to bottles? Yes ☒ No ☒ *as* 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: 6
(2 or >12 unless noted)
Adjusted? yes
Checked by: as

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 HNO₃ to -0016 for acceptable pH*

Cooler Information

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

4/7 @ 1150
as



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Quarterly Temporary RO Reject Sample Details



Project Name		Biannual RO Reject	
Samplers Name		Brady Hubbard	
Samplers Affiliation		Navajo Refining Co. LLC	
Start Date and Time		4/5/2016 @ 7:30 a.m.	
End Date and Time		4/5/2016 @ 8:00 a.m.	

Sample Type	
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Parts / Sample Intervals	
One	

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

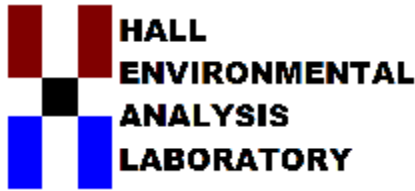
Container	Size	Material	# of Containers	Neat (None)	Preservatives						Analysis and/or Method Requested
					HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	
1	500ml	Plastic	2	X		X					pH, Cl, F, S04, NO2NO3, TDS
2	40ml	VOA	3		X						8015 GRO
3	500ml	Plastic	1		X						6020 total metals, 7470 Hg
4	125ml	Plastic	1		X						6020 Dissolved Metals
5	500ml	Plastic	2				X				Cyanide
6	1L	Plastic	3		X						Radium 226/228
7	40ml	VOA	2		X						3260 see attached list
8	1L	Glass	1	X							8270 see attached list
9	1L	Glass	2	X							8082 PCBs
10	40ml	VOA	2	X							8015 DRO
11	40ml	VOA	2	X							Radium 226/228

Field Data (Weather, Observations, Etc)		4/5/2016 Tmp. 48.2 °F, Humidity 46%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time		

Field Temp. 23.6C Field pH 7.05

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

June 13, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly R.O. Reject

OrderNo.: 1604184

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/6/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued May 12, 2016.

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
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Case Narrative

WO#: 1604184
Date: 6/13/2016

CLIENT: Navajo Refining Company
Project: Quarterly R.O. Reject

Analytical Notes Regarding EPA Method 8015 DRO/MRO:

The results for EPA Method 8015 DRO/MRO are being reported as past the holding time due to a laboratory error.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604184

Date Reported: 6/13/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 4/5/2016 8:15:00 AM

Lab ID: 1604184-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	4/8/2016 2:39:53 PM	24682
EPA METHOD 8082: PCB'S								
Aroclor 1016	ND	0.28	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1221	ND	0.70	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1232	ND	0.76	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1242	ND	0.20	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1248	ND	0.57	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1254	ND	0.97	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1260	ND	0.24	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Surr: Decachlorobiphenyl	121	0	26.1-140		%Rec	1	4/19/2016 2:38:24 AM	24708
Surr: Tetrachloro-m-xylene	95.2	0	15-123		%Rec	1	4/19/2016 2:38:24 AM	24708
EPA METHOD 8015M/D: DIESEL RANGE								
Diesel Range Organics (DRO)	ND	0.69	1.0	H	mg/L	1	5/27/2016 3:55:42 PM	24652
Motor Oil Range Organics (MRO)	ND	5.0	5.0	H	mg/L	1	5/27/2016 3:55:42 PM	24652
Surr: DNOP	94.1	0	70-141	H	%Rec	1	5/27/2016 3:55:42 PM	24652
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	4/8/2016 11:55:58 AM	R33412
Surr: BFB	89.0	0	49.5-130		%Rec	1	4/8/2016 11:55:58 AM	R33412
EPA METHOD 8310: PAHS								
Naphthalene	ND	1.1	2.0		µg/L	1	4/19/2016 11:30:48 AM	24709
1-Methylnaphthalene	ND	1.1	2.0		µg/L	1	4/19/2016 11:30:48 AM	24709
2-Methylnaphthalene	ND	1.1	2.0		µg/L	1	4/19/2016 11:30:48 AM	24709
Benzo(a)pyrene	ND	0.018	0.070		µg/L	1	4/19/2016 11:30:48 AM	24709
Surr: Benzo(e)pyrene	74.7	0	33.4-129		%Rec	1	4/19/2016 11:30:48 AM	24709
EPA METHOD 300.0: ANIONS								
Fluoride	4.7	0.45	2.0	*	mg/L	20	4/18/2016 10:52:15 PM	R33628
Chloride	390	2.7	50		mg/L	100	4/18/2016 11:04:39 PM	R33628
Nitrogen, Nitrite (As N)	ND	0.83	2.0		mg/L	20	4/7/2016 4:51:08 AM	R33368
Nitrogen, Nitrate (As N)	2.4	0.042	0.10		mg/L	1	4/7/2016 4:38:43 AM	R33368
Sulfate	2400	6.4	50		mg/L	100	4/18/2016 11:04:39 PM	R33628
EPA METHOD 200.7: DISSOLVED METALS								
Aluminum	ND	0.0038	0.020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Barium	0.094	0.0013	0.0020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Boron	0.10	0.0011	0.040		mg/L	1	4/18/2016 5:43:21 PM	A33606
Cadmium	ND	0.00075	0.0020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Chromium	ND	0.0018	0.0060		mg/L	1	4/18/2016 5:43:21 PM	A33606

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1604184

Date Reported: 6/13/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 4/5/2016 8:15:00 AM

Lab ID: 1604184-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Cobalt	0.0022	0.00074	0.0060	J	mg/L	1	4/18/2016 5:43:21 PM	A33606
Copper	ND	0.0040	0.0060		mg/L	1	4/18/2016 5:43:21 PM	A33606
Iron	0.034	0.0091	0.020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Manganese	0.0014	0.00032	0.0020	J	mg/L	1	4/18/2016 5:43:21 PM	A33606
Molybdenum	0.0068	0.0019	0.0080	J	mg/L	1	4/18/2016 5:43:21 PM	A33606
Nickel	ND	0.0024	0.010		mg/L	1	4/18/2016 5:43:21 PM	A33606
Silver	ND	0.0028	0.0050		mg/L	1	4/18/2016 5:43:21 PM	A33606
Zinc	0.027	0.0028	0.010		mg/L	1	4/18/2016 5:43:21 PM	A33606
EPA 200.8: DISSOLVED METALS							Analyst: JLF	
Arsenic	0.0027	0.00069	0.0050	J	mg/L	5	4/19/2016 6:19:56 PM	A33644
Lead	ND	0.00036	0.0025		mg/L	5	4/19/2016 6:19:56 PM	A33644
Selenium	0.011	0.0042	0.020	J	mg/L	20	4/20/2016 6:29:13 PM	A33677
Uranium	0.0067	0.00026	0.0025		mg/L	5	4/19/2016 6:19:56 PM	A33644
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	ND	0.000053	0.00020		mg/L	1	4/15/2016 12:01:33 PM	24817
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.096	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Toluene	ND	0.089	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Ethylbenzene	ND	0.11	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,2-Dichloroethane (EDC)	0.32	0.053	1.0	J	µg/L	1	4/14/2016 6:30:43 PM	R33550
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Chloroform	ND	0.089	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1-Dichloroethene	ND	0.076	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Methylene Chloride	ND	0.063	3.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1,2,2-Tetrachloroethane	ND	0.11	2.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1,1-Trichloroethane	ND	0.063	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1,2-Trichloroethane	ND	0.077	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Vinyl chloride	ND	0.063	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Xylenes, Total	ND	0.32	1.5		µg/L	1	4/14/2016 6:30:43 PM	R33550
Surr: 1,2-Dichloroethane-d4	98.3	0	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
Surr: Toluene-d8	94.9	0	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550

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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.

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 4/5/2016 8:15:00 AM

Lab ID: 1604184-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC	
Phenolics, Total Recoverable	ND	1.5	2.5		µg/L	1	4/21/2016	24923
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB	
Cyanide	ND	0.0100	0.0100		mg/L	1	4/13/2016	R34156
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB	
Radium-226	1.02	0.578	0.578		pCi/L	1	4/29/2016	R34156
Radium-226 ±	0.608	0.578	0.578		pCi/L	1	4/29/2016	R34156
Radium-228	0.143	0.803	0.803		pCi/L	1	4/29/2016	R34156
Radium-228 ±	0.361	0.803	0.803		pCi/L	1	4/29/2016	R34156
SM4500-H+B: PH							Analyst: MRA	
pH	8.17	0.100	1.68	H	pH units	1	4/9/2016 2:23:07 AM	R33424
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS	
Total Dissolved Solids	5190	10.5	20.0	*	mg/L	1	4/7/2016 3:22:00 PM	24656

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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	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604184

Date Reported: 6/13/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Quarterly R.O. Reject

Collection Date:

Lab ID: 1604184-002

Matrix: TRIP BLANK

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	4/8/2016 2:54:59 PM	24682
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	4/8/2016 12:20:35 PM	R33412
Surr: BFB	85.7	0	49.5-130		%Rec	1	4/8/2016 12:20:35 PM	R33412
EPA METHOD 8260B: VOLATILES								
Benzene	ND	0.096	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Toluene	ND	0.089	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Ethylbenzene	ND	0.11	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,2-Dichloroethane (EDC)	0.33	0.053	1.0	J	µg/L	1	4/14/2016 6:59:37 PM	R33550
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Chloroform	ND	0.089	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1-Dichloroethene	ND	0.076	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Methylene Chloride	ND	0.063	3.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1,2,2-Tetrachloroethane	ND	0.11	2.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1,1-Trichloroethane	ND	0.063	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1,2-Trichloroethane	ND	0.077	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Vinyl chloride	ND	0.063	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Xylenes, Total	ND	0.32	1.5		µg/L	1	4/14/2016 6:59:37 PM	R33550
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550
Surr: Toluene-d8	96.2	0	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550

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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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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034060		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034061		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.46	0.020	0.5000	0	92.5	85	115			
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Boron	0.50	0.040	0.5000	0	99.1	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.2	85	115			
Copper	0.48	0.0060	0.5000	0	95.7	85	115			
Iron	0.47	0.020	0.5000	0	93.8	85	115			
Manganese	0.47	0.0020	0.5000	0	94.1	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.46	0.010	0.5000	0	91.9	85	115			
Silver	0.097	0.0050	0.1000	0	96.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.4	85	115			

Sample ID LLCS-A	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.010	0.020	0.01000	0	100	50	150			J
Barium	0.0019	0.0020	0.002000	0	94.5	50	150			J

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LLLCS-A		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A33606		RunNo: 33606					
Prep Date:			Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.038	0.040	0.04000	0	94.9	50	150			J
Cadmium	0.0028	0.0020	0.002000	0	140	50	150			
Chromium	0.0063	0.0060	0.006000	0	105	50	150			
Cobalt	0.0056	0.0060	0.006000	0	92.7	50	150			J
Copper	0.0090	0.0060	0.006000	0	150	50	150			S
Iron	0.020	0.020	0.02000	0	98.6	50	150			J
Manganese	0.0018	0.0020	0.002000	0	90.5	50	150			J
Molybdenum	0.0079	0.0080	0.008000	0	99.0	50	150			J
Nickel	0.0043	0.010	0.005000	0	86.2	50	150			J
Silver	0.0046	0.0050	0.005000	0	92.6	50	150			J
Zinc	0.0054	0.010	0.005000	0	108	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A33644		RunNo: 33644					
Prep Date:			Analysis Date: 4/19/2016		SeqNo: 1036133		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	93.5	85	115			
Lead	0.011	0.00050	0.01250	0	91.9	85	115			
Uranium	0.011	0.00050	0.01250	0	91.8	85	115			

Sample ID	LCSLL			SampType:	LCSLL			TestCode: EPA 200.8: Dissolved Metals			
Client ID:	BatchQC			Batch ID:	A33644			RunNo: 33644			
Prep Date:				Analysis Date:	4/19/2016			SeqNo: 1036134		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.0010	0.0010	0.001000	0	102	50	150				
Lead	0.00052	0.00050	0.0005000	0	105	50	150				
Uranium	0.00050	0.00050	0.0005000	0	99.1	50	150			J	

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: A33644			RunNo: 33644					
Prep Date:		Analysis Date: 4/19/2016			SeqNo: 1036136		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								
Uranium	ND	0.00050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	A33677		RunNo:	33677				
Prep Date:			Analysis Date:	4/20/2016		SeqNo:	1037321	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.024	0.0010	0.02500	0	97.2	85	115				

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A33677		RunNo: 33677					
Prep Date:			Analysis Date: 4/20/2016		SeqNo: 1037322		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0011	0.0010	0.001000	0	106	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	A33677	RunNo:	33677					
Prep Date:		Analysis Date:	4/20/2016	SeqNo:	1037323	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24817	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032804	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-24817	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032805	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R33368	RunNo:	33368					
Prep Date:		Analysis Date:	4/6/2016	SeqNo:	1025773	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R33368	RunNo:	33368					
Prep Date:		Analysis Date:	4/6/2016	SeqNo:	1025774	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R33628	RunNo:	33628					
Prep Date:		Analysis Date:	4/18/2016	SeqNo:	1035257	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:	R33628	RunNo:	33628					
Prep Date:		Analysis Date:	4/18/2016	SeqNo:	1035258	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	109	90	110			
Chloride	4.8	0.50	5.000	0	96.7	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24682	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	24682	RunNo:	33411					
Prep Date:	4/7/2016	Analysis Date:	4/8/2016	SeqNo:	1027492	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-24682	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	24682	RunNo:	33411					
Prep Date:	4/7/2016	Analysis Date:	4/8/2016	SeqNo:	1027494	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	116	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24652		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026445		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		102	70	141			

Sample ID	LCS-24652		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026634		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Sample ID	LCS-25494		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	25494		RunNo:	34489				
Prep Date:	5/25/2016		Analysis Date:	5/26/2016		SeqNo:	1064130		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	0.50		0.5000		101	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027408	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	17		20.00		86.6	49.5	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027409	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	19		20.00		96.6	49.5	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24708	SampType:	MBLK		TestCode:	EPA Method 8082: PCB's				
Client ID:	PBW	Batch ID:	24708		RunNo:	33583				
Prep Date:	4/11/2016	Analysis Date:	4/18/2016		SeqNo:	1034347	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.5		2.500		99.2	26.1	140			
Surr: Tetrachloro-m-xylene	2.3		2.500		93.2	15	123			

Sample ID	LCS-24708		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034348		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	6.5	1.0	5.000	0	130	15	131			
Aroclor 1260	9.4	1.0	5.000	0	189	15	162			S
Surr: Decachlorobiphenyl	5.2		2.500		208	26.1	140			S
Surr: Tetrachloro-m-xylene	5.2		2.500		208	15	123			S

Sample ID	LCSD-24708		SampType: LCSD		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034349		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.5	1.0	5.000	0	70.0	15	131	60.1	24.4	R
Aroclor 1260	6.1	1.0	5.000	0	123	15	162	42.3	28	R
Surr: Decachlorobiphenyl	3.3		2.500		133	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	2.9		2.500		118	15	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R33550			RunNo: 33550					
Prep Date:	Analysis Date: 4/14/2016			SeqNo: 1032303		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	99.4	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.7	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	12		10.00		117	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R33550			RunNo: 33550					
Prep Date:		Analysis Date: 4/14/2016			SeqNo: 1032305		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								
1,2-Dichloroethane (EDC)	0.33	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	0.79	3.0								J
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		112	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24709		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	24709		RunNo:	33614			
Prep Date:	4/11/2016		Analysis Date:	4/19/2016		SeqNo:	1034469	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	15		20.00		77.2	33.4	129			

Sample ID	LCS-24709		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	24709		RunNo:	33614			
Prep Date:	4/11/2016		Analysis Date:	4/19/2016		SeqNo:	1034474	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	79	2.0	80.00	0	98.3	54.6	110			
1-Methylnaphthalene	80	2.0	80.20	0	99.9	49.1	116			
2-Methylnaphthalene	81	2.0	80.00	0	101	52.5	111			
Acenaphthylene	73	2.5	80.20	0	91.0	63.7	122			
Acenaphthene	81	2.0	80.00	0	101	50.6	114			
Fluorene	8.2	0.80	8.020	0	103	48.9	106			
Phenanthrene	4.0	0.60	4.020	0	98.5	54.7	110			
Anthracene	3.7	0.60	4.020	0	92.5	52	106			
Fluoranthene	8.7	0.30	8.020	0	109	57.8	113			
Pyrene	7.6	0.30	8.020	0	95.3	59.7	118			
Benz(a)anthracene	0.88	0.070	0.8020	0	110	56.6	109			S
Chrysene	4.1	0.20	4.020	0	102	57.6	110			
Benzo(b)fluoranthene	0.91	0.10	1.002	0	90.8	54.9	106			
Benzo(k)fluoranthene	0.51	0.070	0.5000	0	102	59.3	112			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-24709		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 24709		RunNo: 33614					
Prep Date:	4/11/2016		Analysis Date: 4/19/2016		SeqNo: 1034474		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107			
Dibenz(a,h)anthracene	1.1	0.12	1.002	0	106	54.8	108			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	105	56.9	110			
Indeno(1,2,3-cd)pyrene	2.3	0.25	2.004	0	113	55.2	109			S
Surr: Benzo(e)pyrene	11		20.00		53.7	33.4	129			

Sample ID	LCSD-24709		SampType: LCSD		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS02		Batch ID: 24709		RunNo: 33614					
Prep Date:	4/11/2016		Analysis Date: 4/19/2016		SeqNo: 1034484		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	76	2.0	80.00	0	94.6	54.6	110	3.77	20	
1-Methylnaphthalene	74	2.0	80.20	0	92.8	49.1	116	7.35	20	
2-Methylnaphthalene	73	2.0	80.00	0	91.6	52.5	111	9.80	20	
Acenaphthylene	70	2.5	80.20	0	87.3	63.7	122	4.19	20	
Acenaphthene	73	2.0	80.00	0	91.4	50.6	114	10.4	20	
Fluorene	6.6	0.80	8.020	0	82.8	48.9	106	21.4	20	R
Phenanthrene	3.8	0.60	4.020	0	95.0	54.7	110	3.60	24	
Anthracene	3.6	0.60	4.020	0	88.6	52	106	4.40	20	
Fluoranthene	8.4	0.30	8.020	0	104	57.8	113	3.98	20.9	
Pyrene	7.3	0.30	8.020	0	91.5	59.7	118	4.01	20.8	
Benz(a)anthracene	0.85	0.070	0.8020	0	106	56.6	109	3.47	20	
Chrysene	4.0	0.20	4.020	0	98.8	57.6	110	3.47	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.9	106	5.65	20.6	
Benzo(k)fluoranthene	0.49	0.070	0.5000	0	98.0	59.3	112	4.00	20.8	
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107	3.85	20	
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	101	54.8	108	4.83	20	
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	100	56.9	110	4.88	20	
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109	7.78	20	
Surr: Benzo(e)pyrene	10		20.00		51.5	33.4	129	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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24923	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	24923	RunNo:	33678					
Prep Date:	4/21/2016	Analysis Date:	4/21/2016	SeqNo:	1037376	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-24923	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	24923	RunNo:	33678					
Prep Date:	4/21/2016	Analysis Date:	4/21/2016	SeqNo:	1037377	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	89.0	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R34156		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R34156		RunNo:	34156				
Prep Date:			Analysis Date:	4/13/2016		SeqNo:	1053134	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R34156			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R34156		RunNo:	34156			
Prep Date:				Analysis Date:	4/13/2016		SeqNo:	1053135	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.507		0.5000	0	101	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R34156		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R34156		RunNo:	34156			
Prep Date:			Analysis Date:	4/29/2016		SeqNo:	1053137	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-2.01	0.933								
Radium-226 ±	0.459	0.933								
Radium-228	0.321	0.795								
Radium-228 ±	0.376	0.795								

Qualifiers:

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

B Analyte detected in the 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#: 1604184

13-Jun-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24656		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 24656		RunNo: 33372					
Prep Date:	4/6/2016		Analysis Date: 4/7/2016		SeqNo: 1025974		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-24656		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	24656		RunNo:	33372				
Prep Date:	4/6/2016		Analysis Date:	4/7/2016		SeqNo:	1025975		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1040	20.0	1000	0	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
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: NAVAJO REFINING CO

Work Order Number: 1604184

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/6/2016 9:40:00 AM

Completed By: Ashley Gallegos

4/6/2016 12:24:03 PM

Reviewed By:

Chain of Custody

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

Log In

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

6 1
(2 or 12 unless noted)

Adjusted?

NO

Checked by:

AS

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	1.3	Good	Yes			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Quarterly RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Brady Hubbard
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	4/5/2016 @ 8:05 a.m.
End Date and Time	4/5/2016 @ 8:30 a.m.

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	Solid <input type="checkbox"/>
	Liquid <input checked="" type="checkbox"/>
	Sludge <input type="checkbox"/>

Parts / Sample Intervals	One
--------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Container	Size	Material	Total Containers	Neutral (None)	HCl	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X			X					pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Storage Method	Ice <input checked="" type="checkbox"/>
	Refrigerated <input type="checkbox"/>
	Other <input type="checkbox"/>

Shipping Media	Ice <input checked="" type="checkbox"/>
	Other <input type="checkbox"/>

Field Data (Weather, Observations, Etc.)	4/5/2016 Temp 55.4 °F, Humidity 41%, Wind Dir. SE, Wind Speed 4.6mph, Conditions Clear
Date and Time	
Field Temp 23.6C	Field pH 7.05

Combs, Robert

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Wednesday, May 18, 2016 12:35 PM
To: Combs, Robert; Griswold, Jim, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: RE: April RO Reject Monthly Report

Follow Up Flag: Follow up
Flag Status: Flagged

Robert:

Good afternoon.

The New Mexico Oil Conservation Division observes environmental water quality detections of Diesel Range Organics-DRO and notices the Detection Limits used for GRO and MRO appear to be too high.

The detection of DROs in the RO Effluent appears to be new and may be associated with recent HollyFrontier Wastewater treatment activities at the facility? **OCD hereby requires** immediate resampling and environmental analysis of RO Reject Water from the Permanent RO and Temporary RO Units for Method 8015 (GRO/DRO/MRO) and Method 8260 **Full Scan** to identify the specific DROs detected in the above subject report with environmental analyses.

Please submit the analytical data with full QA/QC to OCD within the next 30-days with a summary explanation of any explanations for the recent detections in the RO effluent discharged to the farm fields. Please contact me if you have questions.

Thank you.

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

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

From: Combs, Robert [<mailto:Robert.Combs@HollyFrontier.com>]
Sent: Thursday, May 12, 2016 4:11 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Cc: McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>
Subject: April RO Reject Monthly Report

Jim & Carl,

Attached is the monthly report for the month of April concerning the RO Reject, as required by the GW-028 condition 4.B.7. This report will be mailed today.

Please let me know if you have any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Combs, Robert

From: Andy Freeman <andy@hallenvironmental.com>
Sent: Thursday, May 26, 2016 9:53 AM
To: Combs, Robert
Subject: Updated DRO values for RO Reject and Temporary RO Reject collected 4/5/2016

Hi Robert,

I would like to inform you about an error that happened at Hall Environmental in regards to the DRO results for the RO Reject and the Temporary RO Reject samples collected on 4/5/2016.

At your request, on the week of 5/16, we reviewed the DRO results for both the Temporary RO Reject and the RO Reject samples collected on 4/5/2016. The laboratory data was correct as reported according to the chromatograms that we had on file, however the results were not consistent with past results. We located the samples and reextracted and reanalyzed the water samples, past the holding time. The new results for both the Temporary RO Reject and the RO Reject samples were different than the original results reported. The new results for both samples were nondetect. We reviewed the original 8015 DRO batch run and we believe that our analyst made an error in the placement of your samples on the autosampler and two different samples were analyzed in place of your samples. We reviewed the results and the chromatograms for the 8260 samples and the 8310 samples and the new nondetect results are in line with the new nondetect results for these two DRO samples. We will be reissuing both the Temporary RO Reject report and the RO Reject reports, collected on 4/5, to reflect the nondetect results. These updated results will be flagged as being out of holding time and out of temperature. We received new RO Reject and Temporary RO Reject samples on 5/20 and both of the DRO results were nondetect for these samples.

Hall Environmental would like to apologize for this error. It is rare for this type of error to occur and we take great pride in our work. We have reviewed this error with the analyst and the entire semivolatiles section and ways to prevent this from happening in the future.

Please let me know if you have any questions.

Thank you,

Andy Freeman
Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
505-345-3975
505-345-4107 fax
www.hallenvironmental.com
andy@hallenvironmental.com

****Hall Environmental is going paperless!**** Beginning February 1st, 2014, paper copies of final reports and invoices will no longer be mailed. All final reports and invoices will be sent directly to the e-mail(s) specified on the chain(s) and will also be posted to our web portal.

To sign up for access to our web portal, go to our website, www.hallenvironmental.com, and click on the "ClientLogin" tab. From this screen, click on the "Sign up" tab and follow the instructions to set up a username and password. Feel free to contact us at any time at 505-345-3975 if you require paper copies or have any other questions.

We welcome your feedback. Please visit the survey site below to complete a brief survey on your experience with Hall Environmental.

<https://www.surveymonkey.com/r/NGVXRBV>

Attachment 3
Analytical Lab Report
(May 2016)



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

May 27, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1605957

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/20/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605957

Date Reported: 5/27/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 5/19/2016 9:30:00 AM

Lab ID: 1605957-001

Matrix: AQUEOUS

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	5/23/2016 7:19:12 PM	25433
Analyst: JME								
EPA METHOD 8082: PCB'S								
Aroclor 1016	ND	0.28	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Aroclor 1221	ND	0.70	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Aroclor 1232	ND	0.76	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Aroclor 1242	ND	0.20	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Aroclor 1248	ND	0.57	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Aroclor 1254	ND	0.97	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Aroclor 1260	ND	0.24	1.0		µg/L	1	5/26/2016 1:01:11 PM	25436
Surr: Decachlorobiphenyl	50.8	0	26.1-140		%Rec	1	5/26/2016 1:01:11 PM	25436
Surr: Tetrachloro-m-xylene	53.2	0	15-123		%Rec	1	5/26/2016 1:01:11 PM	25436
Analyst: SCC								
EPA METHOD 8015D: DIESEL RANGE								
Diesel Range Organics (DRO)	ND	0.20	0.20		mg/L	1	5/23/2016 10:32:02 AM	25440
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	5/23/2016 10:32:02 AM	25440
Surr: DNOP	116	0	63.2-161		%Rec	1	5/23/2016 10:32:02 AM	25440
Analyst: KJH								
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	5/23/2016 11:54:29 AM	A34422
Surr: BFB	89.9	0	66.4-120		%Rec	1	5/23/2016 11:54:29 AM	A34422
Analyst: NSB								
EPA METHOD 8310: PAHS								
Naphthalene	ND	1.1	2.0		µg/L	1	5/24/2016 3:56:19 PM	25416
1-Methylnaphthalene	ND	1.1	2.0		µg/L	1	5/24/2016 3:56:19 PM	25416
2-Methylnaphthalene	ND	1.1	2.0		µg/L	1	5/24/2016 3:56:19 PM	25416
Benzo(a)pyrene	ND	0.018	0.070		µg/L	1	5/24/2016 3:56:19 PM	25416
Surr: Benzo(e)pyrene	70.2	0	20-153		%Rec	1	5/24/2016 3:56:19 PM	25416
Analyst: SCC								
EPA METHOD 300.0: ANIONS								
Fluoride	2.5	0.023	0.10		mg/L	1	5/24/2016 8:25:09 PM	R34457
Chloride	36	1.4	25		mg/L	50	5/24/2016 8:37:33 PM	R34457
Sulfate	990	3.2	25		mg/L	50	5/24/2016 8:37:33 PM	R34457
Nitrate+Nitrite as N	1.3	0.42	1.0		mg/L	5	5/24/2016 8:49:59 PM	R34457
Analyst: LGT								
EPA METHOD 200.7: DISSOLVED METALS								
Aluminum	ND	0.0038	0.020		mg/L	1	5/23/2016 11:58:08 AM	A34409
Barium	0.040	0.0013	0.0020		mg/L	1	5/23/2016 11:58:08 AM	A34409
Boron	0.060	0.0011	0.040		mg/L	1	5/23/2016 11:58:08 AM	A34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 11:58:08 AM	A34409
Chromium	ND	0.0018	0.0060		mg/L	1	5/23/2016 11:58:08 AM	A34409
Cobalt	0.0029	0.00074	0.0060	J	mg/L	1	5/23/2016 11:58:08 AM	A34409
Analyst: ELS								

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1605957

Date Reported: 5/27/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 5/19/2016 9:30:00 AM

Lab ID: 1605957-001

Matrix: AQUEOUS

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Copper	ND	0.0040	0.0060		mg/L	1	5/23/2016 11:58:08 AM	A34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 11:58:08 AM	A34409
Manganese	0.00056	0.00032	0.0020	J	mg/L	1	5/23/2016 11:58:08 AM	A34409
Molybdenum	0.011	0.0019	0.0080		mg/L	1	5/23/2016 11:58:08 AM	A34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 11:58:08 AM	A34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 11:58:08 AM	A34409
Zinc	0.0056	0.0028	0.010	J	mg/L	1	5/23/2016 11:58:08 AM	A34409
EPA 200.8: DISSOLVED METALS							Analyst: JLF	
Arsenic	0.0013	0.00014	0.0010		mg/L	1	5/20/2016 3:46:20 PM	B34393
Lead	ND	0.00017	0.00050		mg/L	1	5/20/2016 3:46:20 PM	B34393
Selenium	0.0064	0.00021	0.0010		mg/L	1	5/20/2016 3:46:20 PM	B34393
Uranium	0.0030	0.000051	0.00050		mg/L	1	5/20/2016 3:46:20 PM	B34393
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	ND	0.000053	0.00020		mg/L	1	5/24/2016 10:55:01 AM	25455
EPA METHOD 8260B: VOLATILES							Analyst: BCN	
Benzene	ND	0.096	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Toluene	ND	0.12	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Chloroform	ND	0.089	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/21/2016 7:30:00 AM	C34390
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/21/2016 7:30:00 AM	C34390
Surr: 1,2-Dichloroethane-d4	83.7	0	70-130		%Rec	1	5/21/2016 7:30:00 AM	C34390
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/21/2016 7:30:00 AM	C34390
Surr: Dibromofluoromethane	82.8	0	70-130		%Rec	1	5/21/2016 7:30:00 AM	C34390
Surr: Toluene-d8	95.5	0	70-130		%Rec	1	5/21/2016 7:30:00 AM	C34390

TOTAL PHENOLICS BY SW-846 9067

Analyst: **SCC**

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1605957**

Date Reported: **5/27/2016**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 5/19/2016 9:30:00 AM

Lab ID: 1605957-001

Matrix: AQUEOUS

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC	
Phenolics, Total Recoverable	ND	1.5	2.5		µg/L	1	5/27/2016	25543
SM4500-H+B: PH							Analyst: JRR	
pH	7.75	0.100	1.68	H	pH units	1	5/23/2016 3:18:46 PM	R34435
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS	
Total Dissolved Solids	1890	10.5	20.0	*	mg/L	1	5/25/2016 3:53:00 PM	25475

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1605957

Date Reported: 5/27/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1605957-002

Matrix: TRIP BLANK

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	5/23/2016 7:50:20 PM	25433
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	5/23/2016 1:08:34 PM	A34422
Surr: BFB	91.1	0	66.4-120		%Rec	1	5/23/2016 1:08:34 PM	A34422
EPA METHOD 8260B: VOLATILES								
Benzene	ND	0.096	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Toluene	ND	0.12	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Chloroform	ND	0.089	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/21/2016 7:54:00 AM	C34390
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/21/2016 7:54:00 AM	C34390
Surr: 1,2-Dichloroethane-d4	83.4	0	70-130		%Rec	1	5/21/2016 7:54:00 AM	C34390
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	5/21/2016 7:54:00 AM	C34390
Surr: Dibromofluoromethane	83.2	0	70-130		%Rec	1	5/21/2016 7:54:00 AM	C34390
Surr: Toluene-d8	93.1	0	70-130		%Rec	1	5/21/2016 7:54:00 AM	C34390

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample 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

Anatek Labs, Inc.

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

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

Batch #: 160524029
Project Name: 1605957

Analytical Results Report

Sample Number	160524029-001	Sampling Date	5/19/2016	Date/Time Received	5/24/2016 12:45 PM
Client Sample ID	1605957-001J / TEMPORARY R.O. REJECT			Sampling Time	9:30 AM
Matrix	Water	Sample Location			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	5/27/2016	MER	EPA 335.4	

Authorized Signature


John Coddington, Lab Manager

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

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

Anatek Labs, Inc.

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

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

Batch #: 160524029
Project Name: 1605957

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.534	mg/L	0.5	106.8	90-110	5/27/2016	5/27/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160519034-025	Cyanide	ND	0.510	mg/L	0.5	102.0	90-110	5/27/2016	5/27/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	0.532	mg/L	0.5	106.4	4.2	0-20	5/27/2016	5/27/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/L	0.01	5/27/2016	5/27/2016

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

Comments:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605957

27-May-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

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
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
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
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Barium	0.50	0.0020	0.5000	0	101	85	115			
Boron	0.52	0.040	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			
Copper	0.50	0.0060	0.5000	0	100	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			
Molybdenum	0.53	0.0080	0.5000	0	105	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			
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
Aluminum	0.0097	0.020	0.01000	0	96.7	50	150			J
Barium	0.0018	0.0020	0.002000	0	89.0	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#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

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
Boron	0.040	0.040	0.04000	0	100	50	150			
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			
Copper	0.0071	0.0060	0.006000	0	119	50	150			
Iron	0.023	0.020	0.02000	0	116	50	150			
Manganese	0.0021	0.0020	0.002000	0	103	50	150			
Molybdenum	0.0089	0.0080	0.008000	0	112	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
Zinc	0.0048	0.010	0.005000	0	95.4	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#: 1605957

27-May-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: B34393			RunNo: 34393						
Prep Date:	Analysis Date: 5/20/2016			SeqNo: 1060562		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	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.012	0.00050	0.01250	0	99.4	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: B34393			RunNo: 34393						
Prep Date:	Analysis Date: 5/20/2016			SeqNo: 1060563		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00099	0.0010	0.001000	0	98.8	50	150			J
Lead	0.00049	0.00050	0.0005000	0	97.8	50	150			J
Selenium	0.0010	0.0010	0.001000	0	99.6	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	97.0	50	150			J

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: B34393			RunNo: 34393						
Prep Date:	Analysis Date: 5/20/2016			SeqNo: 1060564		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								
Uranium	ND	0.00050								

Qualifiers:

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

B Analyte detected in the 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#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

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#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R34457	RunNo:	34457					
Prep Date:		Analysis Date:	5/24/2016	SeqNo:	1062706	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R34457	RunNo:	34457					
Prep Date:		Analysis Date:	5/24/2016	SeqNo:	1062707	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.8	0.50	5.000	0	95.0	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	98.5	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-25433	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	25433	RunNo:	34423					
Prep Date:	5/23/2016	Analysis Date:	5/23/2016	SeqNo:	1061420	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-25433	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	25433	RunNo:	34423					
Prep Date:	5/23/2016	Analysis Date:	5/23/2016	SeqNo:	1061422	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	122	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#: 1605957

27-May-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS-25440		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 25440		RunNo: 34408					
Prep Date:	5/23/2016		Analysis Date: 5/23/2016		SeqNo: 1060963		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.5	0.20	2.500	0	101	65.4	162			
Surr: DNOP	0.24		0.2500		97.5	63.2	161			

Sample ID	MB-25440	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 25440			RunNo: 34408					
Prep Date:	5/23/2016	Analysis Date: 5/23/2016			SeqNo: 1060964		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.56		0.5000		111	63.2	161			

Sample ID	1605957-001AMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	Temporary R.O. Rej		Batch ID: 25440		RunNo: 34408					
Prep Date:	5/23/2016		Analysis Date: 5/23/2016		SeqNo: 1061172		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	110	73.3	174			
Surr: DNOP	0.29		0.2500		115	63.2	161			

Sample ID	1605957-001AMSD			SampType:	MSD		TestCode:	EPA Method 8015D: Diesel Range			
Client ID:	Temporary R.O. Rej			Batch ID:	25440		RunNo:	34408			
Prep Date:	5/23/2016		Analysis Date:	5/23/2016		SeqNo:	1061173		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	112	73.3	174	1.16	20		
Surr: DNOP	0.27		0.2500		108	63.2	161	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605957

27-May-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A34422	RunNo:	34422					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061336	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		94.8	66.4	120			

Sample ID	2.5UG GRO LCSB	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A34422	RunNo:	34422					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061337	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.4	80	120			
Surr: BFB	22		20.00		108	66.4	120			

Sample ID	1605957-001BMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Temporary R.O. Rej	Batch ID:	A34422	RunNo:	34422					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061342	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.9	70	130			
Surr: BFB	20		20.00		102	66.4	120			

Sample ID	1605957-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Temporary R.O. Rej	Batch ID:	A34422	RunNo:	34422					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061343	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	105	70	130	5.26	20	
Surr: BFB	21		20.00		107	66.4	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-25436		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 25436		RunNo: 34486					
Prep Date:	5/23/2016		Analysis Date: 5/26/2016		SeqNo: 1063584		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.0		2.500		81.2	26.1	140			
Surr: Tetrachloro-m-xylene	3.0		2.500		119	15	123			

Sample ID	LCS-25436		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 25436		RunNo: 34486					
Prep Date:	5/23/2016		Analysis Date: 5/26/2016		SeqNo: 1063585		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.8	1.0	5.000	0	75.4	15	131			
Aroclor 1260	3.8	1.0	5.000	0	75.9	15	162			
Surr: Decachlorobiphenyl	1.9		2.500		75.6	26.1	140			
Surr: Tetrachloro-m-xylene	2.3		2.500		92.8	15	123			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1605957

27-May-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID 100ng LCS	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: C34390		RunNo: 34390							
Prep Date:	Analysis Date: 5/20/2016		SeqNo: 1060663		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.4	70	130			
Toluene	19	1.0	20.00	0	97.5	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	83.3	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	8.3		10.00		82.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	8.5		10.00		85.4	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID rb2	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: C34390		RunNo: 34390							
Prep Date:	Analysis Date: 5/20/2016		SeqNo: 1060664		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.4		10.00		84.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	8.5		10.00		84.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.9	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#: 1605957

27-May-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-25416	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 25416		RunNo: 34425							
Prep Date: 5/20/2016	Analysis Date: 5/24/2016		SeqNo: 1061459		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	14		20.00		69.0	20	153			

Sample ID LCS-25416	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 25416		RunNo: 34425							
Prep Date: 5/20/2016	Analysis Date: 5/24/2016		SeqNo: 1061630		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	66	2.0	80.00	0	82.8	55.6	124			
1-Methylnaphthalene	65	2.0	80.20	0	80.8	55.3	124			
2-Methylnaphthalene	64	2.0	80.00	0	80.6	55.4	124			
Acenaphthylene	66	2.5	80.20	0	82.9	60.2	119			
Acenaphthene	64	2.0	80.00	0	80.4	56	126			
Fluorene	6.2	0.80	8.020	0	77.8	51.6	129			
Phenanthrene	3.3	0.60	4.020	0	81.1	58.8	129			
Anthracene	3.3	0.60	4.020	0	82.3	59.9	121			
Fluoranthene	5.4	0.30	8.020	0	67.0	48	145			
Pyrene	6.6	0.30	8.020	0	81.7	56.2	130			
Benz(a)anthracene	0.67	0.070	0.8020	0	83.5	50.4	142			
Chrysene	3.2	0.20	4.020	0	80.6	54.7	134			
Benzo(b)fluoranthene	0.82	0.10	1.002	0	81.8	61.8	120			
Benzo(k)fluoranthene	0.42	0.070	0.5000	0	84.0	55.9	134			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	LCS-25416		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 25416		RunNo: 34425					
Prep Date:	5/20/2016		Analysis Date: 5/24/2016		SeqNo: 1061630		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.43	0.070	0.5020	0	85.7	51.3	137			
Dibenz(a,h)anthracene	0.84	0.12	1.002	0	83.8	57.8	134			
Benzo(g,h,i)perylene	0.85	0.12	1.000	0	85.0	57.2	134			
Indeno(1,2,3-cd)pyrene	1.6	0.25	2.004	0	81.3	58.2	137			
Surr: Benzo(e)pyrene	15		20.00		76.9	20	153			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-25543	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	25543	RunNo:	34512					
Prep Date:	5/27/2016	Analysis Date:	5/27/2016	SeqNo:	1064497	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-25543	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	25543	RunNo:	34512					
Prep Date:	5/27/2016	Analysis Date:	5/27/2016	SeqNo:	1064498	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	116	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605957

27-May-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-25475		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	25475		RunNo:	34475				
Prep Date:	5/24/2016		Analysis Date:	5/25/2016		SeqNo:	1063156		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-25475		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 25475		RunNo: 34475					
Prep Date:	5/24/2016		Analysis Date: 5/25/2016		SeqNo: 1063157		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	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



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: NAVAJO REFINING CO

Work Order Number: 1605957

RcptNo: 1

Received by/date:

SA 05/20/16

Logged By:

Lindsay Mangin

5/20/2016 9:50:00 AM

Lindsay Mangin

Completed By:

Lindsay Mangin

5/20/2016 10:07:53 AM

Lindsay Mangin

Reviewed By:

Ja

05/20/16

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 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

IM 88211-0159

Phone #: 575-748-3311

Email or Fax#: 575-748-5451

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

UNIT-AVAILABILITY TIME:

X Standard ☐ Rush

Project Name:

Monthly Temporary R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Brady Hubbard

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.8

Date Time Matrix Sample Request ID

19-16 9:30 liquid Temporary R.O. Reject

19-16 9:30 liquid Temporary R.O. Reject

19-16 9:30 liquid Temporary R.O. Reject

19-16 9:30 liquid Temporary R.O. Reject

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19-16 9:30 liquid Temporary R.O. Reject

19-16 9:30 liquid Temporary R.O. Reject

19-16 9:30 liquid Temporary R.O. Reject

19-16 9:30 liquid Trip Blank

Relinquished by: Brady Hubbard

Relinquished by: Brady Hubbard

Relinquished by: Brady Hubbard

Relinquished by: Brady Hubbard

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Container Type and #

2 - 500ml P

3-40ml VOA

1-500ml P

1-125ml P

1-500ml P

2- 1L P

2-40ml VOA

2 - 1L Glass

1 - 1L Glass

3-40ml VOA

1-250ml Glass

1 - 1L Glass

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

2-40ml VOA

Preservative Type

1-unpres H2SO4

HCL

HNO3

HNO3

NaOH

HNO3

Na2S2O3

unpres

unpres

HCL

unpres

H2SO4

HCL

HCL

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HEAL No.

1605957

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8260B: WQCC List VOCs

X

8270C: WQCC list SVOCs

6010B: WQCC Metals

8270C: WQCC list SVOCs

6010B: WQCC Metals

8270C: WQCC list SVOCs

6010B: WQCC Metals

8260B: WQCC List VOCs

8270C: WQCC list SVOCs



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

May 27, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly R.O. Reject

OrderNo.: 1605958

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/20/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605958

Date Reported: 5/27/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 5/19/2016 10:15:00 AM

Lab ID: 1605958-001

Matrix: AQUEOUS

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	5/23/2016 8:05:54 PM	25433
Analyst: JME								
EPA METHOD 8082: PCB'S								
Aroclor 1016	ND	0.28	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Aroclor 1221	ND	0.70	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Aroclor 1232	ND	0.76	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Aroclor 1242	ND	0.20	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Aroclor 1248	ND	0.57	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Aroclor 1254	ND	0.97	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Aroclor 1260	ND	0.24	1.0		µg/L	1	5/26/2016 2:13:41 PM	25436
Surr: Decachlorobiphenyl	67.2	0	26.1-140		%Rec	1	5/26/2016 2:13:41 PM	25436
Surr: Tetrachloro-m-xylene	73.6	0	15-123		%Rec	1	5/26/2016 2:13:41 PM	25436
Analyst: SCC								
EPA METHOD 8015D: DIESEL RANGE								
Diesel Range Organics (DRO)	ND	0.20	0.20		mg/L	1	5/23/2016 10:53:32 AM	25440
Motor Oil Range Organics (MRO)	ND	2.5	2.5		mg/L	1	5/23/2016 10:53:32 AM	25440
Surr: DNOP	119	0	63.2-161		%Rec	1	5/23/2016 10:53:32 AM	25440
Analyst: KJH								
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	5/23/2016 1:33:07 PM	A34422
Surr: BFB	89.1	0	66.4-120		%Rec	1	5/23/2016 1:33:07 PM	A34422
Analyst: NSB								
EPA METHOD 8310: PAHS								
Naphthalene	ND	1.1	2.0		µg/L	1	5/24/2016 4:25:34 PM	25416
1-Methylnaphthalene	ND	1.1	2.0		µg/L	1	5/24/2016 4:25:34 PM	25416
2-Methylnaphthalene	ND	1.1	2.0		µg/L	1	5/24/2016 4:25:34 PM	25416
Benzo(a)pyrene	ND	0.018	0.070		µg/L	1	5/24/2016 4:25:34 PM	25416
Surr: Benzo(e)pyrene	73.0	0	20-153		%Rec	1	5/24/2016 4:25:34 PM	25416
Analyst: SCC								
EPA METHOD 300.0: ANIONS								
Fluoride	1.9	0.023	0.10		mg/L	1	5/21/2016 4:05:35 AM	A34410
Chloride	190	0.55	10		mg/L	20	5/21/2016 4:42:49 AM	A34410
Nitrogen, Nitrate (As N)	1.2	0.042	0.10		mg/L	1	5/21/2016 4:05:35 AM	A34410
Sulfate	1000	3.2	25		mg/L	50	5/24/2016 10:29:18 PM	R34453
Analyst: LGT								
EPA METHOD 200.7: DISSOLVED METALS								
Aluminum	ND	0.0038	0.020		mg/L	1	5/23/2016 11:59:58 AM	A34409
Barium	0.067	0.0013	0.0020		mg/L	1	5/23/2016 11:59:58 AM	A34409
Boron	0.096	0.0011	0.040		mg/L	1	5/23/2016 11:59:58 AM	A34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 11:59:58 AM	A34409
Chromium	ND	0.0018	0.0060		mg/L	1	5/23/2016 11:59:58 AM	A34409
Cobalt	0.0031	0.00074	0.0060	J	mg/L	1	5/23/2016 11:59:58 AM	A34409
Analyst: ELS								

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1605958

Date Reported: 5/27/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 5/19/2016 10:15:00 AM

Lab ID: 1605958-001

Matrix: AQUEOUS

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Copper	ND	0.0040	0.0060		mg/L	1	5/23/2016 11:59:58 AM	A34409
Iron	0.033	0.0091	0.020		mg/L	1	5/23/2016 11:59:58 AM	A34409
Manganese	0.0017	0.00032	0.0020	J	mg/L	1	5/23/2016 11:59:58 AM	A34409
Molybdenum	0.0060	0.0019	0.0080	J	mg/L	1	5/23/2016 11:59:58 AM	A34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 11:59:58 AM	A34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 11:59:58 AM	A34409
Zinc	0.023	0.0028	0.010		mg/L	1	5/23/2016 11:59:58 AM	A34409
EPA 200.8: DISSOLVED METALS							Analyst: JLF	
Arsenic	0.0016	0.00069	0.0050	J	mg/L	5	5/20/2016 4:01:39 PM	B34393
Lead	ND	0.00017	0.00050		mg/L	1	5/20/2016 3:58:35 PM	B34393
Selenium	0.0088	0.00021	0.0010		mg/L	1	5/20/2016 3:58:35 PM	B34393
Uranium	0.0054	0.000051	0.00050		mg/L	1	5/20/2016 3:58:35 PM	B34393
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	ND	0.000053	0.00020		mg/L	1	5/24/2016 10:57:02 AM	25455
EPA METHOD 8260B: VOLATILES							Analyst: BCN	
Benzene	ND	0.096	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Toluene	ND	0.12	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Chloroform	ND	0.089	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/21/2016 8:17:00 AM	C34390
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/21/2016 8:17:00 AM	C34390
Surr: 1,2-Dichloroethane-d4	84.7	0	70-130		%Rec	1	5/21/2016 8:17:00 AM	C34390
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	5/21/2016 8:17:00 AM	C34390
Surr: Dibromofluoromethane	83.6	0	70-130		%Rec	1	5/21/2016 8:17:00 AM	C34390
Surr: Toluene-d8	94.7	0	70-130		%Rec	1	5/21/2016 8:17:00 AM	C34390
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC	

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1605958**

Date Reported: **5/27/2016**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 5/19/2016 10:15:00 AM

Lab ID: 1605958-001

Matrix: AQUEOUS

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC	
Phenolics, Total Recoverable	ND	1.5	2.5		µg/L	1	5/27/2016	25543
SM4500-H+B: PH							Analyst: JRR	
pH	7.85	0.100	1.68	H	pH units	1	5/23/2016 3:23:24 PM	R34435
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS	
Total Dissolved Solids	2280	10.5	20.0	*	mg/L	1	5/25/2016 3:53:00 PM	25475

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1605958

Date Reported: 5/27/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1605958-002

Matrix: TRIP BLANK

Received Date: 5/20/2016 9:50:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB								
1,2-Dibromoethane	ND	0.0033	0.010		µg/L	1	5/23/2016 8:52:29 PM	25433
EPA METHOD 8015D: GASOLINE RANGE								
Gasoline Range Organics (GRO)	ND	0.025	0.050		mg/L	1	5/23/2016 1:57:51 PM	A34422
Surr: BFB	91.4	0	66.4-120		%Rec	1	5/23/2016 1:57:51 PM	A34422
EPA METHOD 8260B: VOLATILES								
Benzene	ND	0.096	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Toluene	ND	0.12	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Chloroform	ND	0.089	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/21/2016 8:41:00 AM	C34390
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/21/2016 8:41:00 AM	C34390
Surr: 1,2-Dichloroethane-d4	85.5	0	70-130		%Rec	1	5/21/2016 8:41:00 AM	C34390
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%Rec	1	5/21/2016 8:41:00 AM	C34390
Surr: Dibromofluoromethane	84.3	0	70-130		%Rec	1	5/21/2016 8:41:00 AM	C34390
Surr: Toluene-d8	94.0	0	70-130		%Rec	1	5/21/2016 8:41:00 AM	C34390

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample 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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

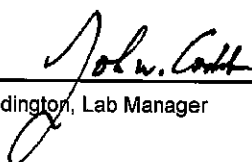
Batch #: 160524028
Project Name: 1605958

Analytical Results Report

Sample Number	160524028-001	Sampling Date	5/19/2016	Date/Time Received	5/24/2016 12:45 PM
Client Sample ID	1605958-001J / R.O. REJECT			Sampling Time	10:15 AM
Matrix	Water	Sample Location			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	5/27/2016	MER	EPA 335.4	

Authorized Signature


John Coddington, Lab Manager

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

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

Batch #: 160524028
Project Name: 1605958

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.534	mg/L	0.5	106.8	90-110	5/27/2016	5/27/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160519034-025	Cyanide	ND	0.510	mg/L	0.5	102.0	90-110	5/27/2016	5/27/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	0.532	mg/L	0.5	106.4	4.2	0-20	5/27/2016	5/27/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/L	0.01	5/27/2016	5/27/2016

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

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0085; FL(NELAP): E871099

Friday, May 27, 2016

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

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
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
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
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Barium	0.50	0.0020	0.5000	0	101	85	115			
Boron	0.52	0.040	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			
Copper	0.50	0.0060	0.5000	0	100	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			
Molybdenum	0.53	0.0080	0.5000	0	105	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			
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
Aluminum	0.0097	0.020	0.01000	0	96.7	50	150			J
Barium	0.0018	0.0020	0.002000	0	89.0	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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

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
Boron	0.040	0.040	0.04000	0	100	50	150			
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			
Copper	0.0071	0.0060	0.006000	0	119	50	150			
Iron	0.023	0.020	0.02000	0	116	50	150			
Manganese	0.0021	0.0020	0.002000	0	103	50	150			
Molybdenum	0.0089	0.0080	0.008000	0	112	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
Zinc	0.0048	0.010	0.005000	0	95.4	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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B34393		RunNo: 34393					
Prep Date:			Analysis Date: 5/20/2016		SeqNo: 1060562		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	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	97.6	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.012	0.00050	0.01250	0	99.4	85	115			

Sample ID	LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B34393			RunNo: 34393					
Prep Date:		Analysis Date: 5/20/2016			SeqNo: 1060563		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00099	0.0010	0.001000	0	98.8	50	150			J
Lead	0.00049	0.00050	0.0005000	0	97.8	50	150			J
Selenium	0.0010	0.0010	0.001000	0	99.6	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	97.0	50	150			J

Sample ID	MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW	Batch ID: B34393		RunNo: 34393						
Prep Date:		Analysis Date: 5/20/2016		SeqNo: 1060564			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								
Uranium	ND	0.00050								

Qualifiers:

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

B Analyte detected in the 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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A34410	RunNo:	34410					
Prep Date:		Analysis Date:	5/20/2016	SeqNo:	1061021	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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A34410	RunNo:	34410					
Prep Date:		Analysis Date:	5/20/2016	SeqNo:	1061022	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	94.7	90	110			
Chloride	4.9	0.50	5.000	0	97.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.3	90	110			

Sample ID	1605958-001FMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	R.O. Reject	Batch ID:	A34410	RunNo:	34410					
Prep Date:		Analysis Date:	5/21/2016	SeqNo:	1061050	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.2	0.10	0.5000	1.948	59.5	71.4	120			S
Nitrogen, Nitrate (As N)	3.7	0.10	2.500	1.246	99.1	87.3	111			

Sample ID	1605958-001FMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	R.O. Reject	Batch ID:	A34410	RunNo:	34410					
Prep Date:		Analysis Date:	5/21/2016	SeqNo:	1061051	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	0.5000	1.948	92.5	71.4	120	7.09	20	
Nitrogen, Nitrate (As N)	3.7	0.10	2.500	1.246	99.0	87.3	111	0.0806	20	

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R34453	RunNo:	34453					
Prep Date:		Analysis Date:	5/24/2016	SeqNo:	1062512	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R34453			RunNo: 34453					
Prep Date:			Analysis Date: 5/24/2016			SeqNo: 1062513		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sulfate	9.7	0.50	10.00	0	96.5	90	110				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID MB-25433	SampType: MBLK			TestCode: EPA Method 8011/504.1: EDB						
Client ID: PBW	Batch ID: 25433			RunNo: 34423						
Prep Date: 5/23/2016	Analysis Date: 5/23/2016			SeqNo: 1061420	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID LCS-25433	SampType: LCS			TestCode: EPA Method 8011/504.1: EDB						
Client ID: LCSW	Batch ID: 25433			RunNo: 34423						
Prep Date: 5/23/2016	Analysis Date: 5/23/2016			SeqNo: 1061422	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	122	70	130			

Sample ID 1605958-001CMS	SampType: MS			TestCode: EPA Method 8011/504.1: EDB						
Client ID: R.O. Reject	Batch ID: 25433			RunNo: 34423						
Prep Date: 5/23/2016	Analysis Date: 5/23/2016			SeqNo: 1061456	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	40.3	153			

Sample ID 1605958-001CMSD	SampType: MSD			TestCode: EPA Method 8011/504.1: EDB						
Client ID: R.O. Reject	Batch ID: 25433			RunNo: 34423						
Prep Date: 5/23/2016	Analysis Date: 5/23/2016			SeqNo: 1061458	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	40.3	153	3.01	29.5	

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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS-25440		SampType: LCS			TestCode: EPA Method 8015D: Diesel Range				
Client ID:	LCSW		Batch ID: 25440			RunNo: 34408				
Prep Date:	5/23/2016		Analysis Date: 5/23/2016			SeqNo: 1060963		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.5	0.20	2.500	0	101	65.4	162			
Surr: DNOP	0.24		0.2500		97.5	63.2	161			

Sample ID	MB-25440		SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range				
Client ID:	PBW		Batch ID: 25440			RunNo: 34408				
Prep Date:	5/23/2016		Analysis Date: 5/23/2016			SeqNo: 1060964		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.56		0.5000		111	63.2	161			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A34422	RunNo:	34422					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061336	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		94.8	66.4	120			

Sample ID	2.5UG GRO LCSB	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A34422	RunNo:	34422					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061337	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.4	80	120			
Surr: BFB	22		20.00		108	66.4	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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-25436		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 25436		RunNo: 34486					
Prep Date:	5/23/2016		Analysis Date: 5/26/2016		SeqNo: 1063584		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.0		2.500		81.2	26.1	140			
Surr: Tetrachloro-m-xylene	3.0		2.500		119	15	123			

Sample ID	LCS-25436		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 25436		RunNo: 34486					
Prep Date:	5/23/2016		Analysis Date: 5/26/2016		SeqNo: 1063585		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.8	1.0	5.000	0	75.4	15	131			
Aroclor 1260	3.8	1.0	5.000	0	75.9	15	162			
Surr: Decachlorobiphenyl	1.9		2.500		75.6	26.1	140			
Surr: Tetrachloro-m-xylene	2.3		2.500		92.8	15	123			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	100ng LCS	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	LCSW	Batch ID: C34390		RunNo: 34390						
Prep Date:	Analysis Date: 5/20/2016		SeqNo: 1060663		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.4	70	130			
Toluene	19	1.0	20.00	0	97.5	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	83.3	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	8.3		10.00		82.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	8.5		10.00		85.4	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: C34390			RunNo: 34390					
Prep Date:		Analysis Date: 5/20/2016			SeqNo: 1060664		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.4		10.00		84.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	8.5		10.00		84.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.9	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-25416		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	25416		RunNo:	34425			
Prep Date:	5/20/2016		Analysis Date:	5/24/2016		SeqNo:	1061459	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	14		20.00		69.0	20	153			

Sample ID	LCS-25416		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	25416		RunNo:	34425			
Prep Date:	5/20/2016		Analysis Date:	5/24/2016		SeqNo:	1061630	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	66	2.0	80.00	0	82.8	55.6	124			
1-Methylnaphthalene	65	2.0	80.20	0	80.8	55.3	124			
2-Methylnaphthalene	64	2.0	80.00	0	80.6	55.4	124			
Acenaphthylene	66	2.5	80.20	0	82.9	60.2	119			
Acenaphthene	64	2.0	80.00	0	80.4	56	126			
Fluorene	6.2	0.80	8.020	0	77.8	51.6	129			
Phenanthrene	3.3	0.60	4.020	0	81.1	58.8	129			
Anthracene	3.3	0.60	4.020	0	82.3	59.9	121			
Fluoranthene	5.4	0.30	8.020	0	67.0	48	145			
Pyrene	6.6	0.30	8.020	0	81.7	56.2	130			
Benz(a)anthracene	0.67	0.070	0.8020	0	83.5	50.4	142			
Chrysene	3.2	0.20	4.020	0	80.6	54.7	134			
Benzo(b)fluoranthene	0.82	0.10	1.002	0	81.8	61.8	120			
Benzo(k)fluoranthene	0.42	0.070	0.5000	0	84.0	55.9	134			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS-25416		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 25416		RunNo: 34425					
Prep Date:	5/20/2016		Analysis Date: 5/24/2016		SeqNo: 1061630		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.43	0.070	0.5020	0	85.7	51.3	137			
Dibenz(a,h)anthracene	0.84	0.12	1.002	0	83.8	57.8	134			
Benzo(g,h,i)perylene	0.85	0.12	1.000	0	85.0	57.2	134			
Indeno(1,2,3-cd)pyrene	1.6	0.25	2.004	0	81.3	58.2	137			
Surr: Benzo(e)pyrene	15		20.00		76.9	20	153			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-25543	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	25543	RunNo:	34512					
Prep Date:	5/27/2016	Analysis Date:	5/27/2016	SeqNo:	1064497	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-25543	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	25543	RunNo:	34512					
Prep Date:	5/27/2016	Analysis Date:	5/27/2016	SeqNo:	1064498	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	116	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605958

27-May-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-25475		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	25475		RunNo:	34475				
Prep Date:	5/24/2016		Analysis Date:	5/25/2016		SeqNo:	1063156		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-25475		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	25475		RunNo:	34475				
Prep Date:	5/24/2016		Analysis Date:	5/25/2016		SeqNo:	1063157	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1010	20.0	1000	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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1605958

RcptNo: 1

Received by/date: SA 05/20/16

Logged By: Lindsay Mangin 5/20/2016 9:50:00 AM *[Signature]*

Completed By: Lindsay Mangin 5/20/2016 10:12:15 AM *[Signature]*

Reviewed By: *[Signature]* 05/20/16

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: 6
(2 or >12 unless noted)
Adjusted? NO
Checked by: AS

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

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

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Wednesday, May 18, 2016 12:53 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: RE: April RO Reject Monthly Report

Carl,
We will get this resampled and reported ASAP. We will also review this with our lab.
Thanks for bringing this to our attention.
Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, May 18, 2016 12:35 PM
To: Combs, Robert; Griswold, Jim, EMNRD
Cc: McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Marks, Allison, EMNRD; Brancard, Bill, EMNRD
Subject: RE: April RO Reject Monthly Report

Robert:

Good afternoon.

The New Mexico Oil Conservation Division observes environmental water quality detections of Diesel Range Organics-DRO and notices the Detection Limits used for GRO and MRO appear to be too high.

The detection of DROs in the RO Effluent appears to be new and may be associated with recent HollyFrontier Wastewater treatment activities at the facility? **OCD hereby requires** immediate resampling and environmental analysis of RO Reject Water from the Permanent RO and Temporary RO Units for Method 8015 (GRO/DRO/MRO) and Method 8260 **Full Scan** to identify the specific DROs detected in the above subject report with environmental analyses.

Please submit the analytical data with full QA/QC to OCD within the next 30-days with a summary explanation of any explanations for the recent detections in the RO effluent discharged to the farm fields. Please contact me if you have questions.

Thank you.

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

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

From: Combs, Robert [<mailto:Robert.Combs@HollyFrontier.com>]

Sent: Thursday, May 12, 2016 4:11 PM

To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>

Cc: McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K.

<Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Denton, Scott

<Scott.Denton@HollyFrontier.com>; Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD

<bill.brancard@state.nm.us>

Subject: April RO Reject Monthly Report

Jim & Carl,

Attached is the monthly report for the month of April concerning the RO Reject, as required by the GW-028 condition 4.B.7. This report will be mailed today.

Please let me know if you have any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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May 12, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – April 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's April 2016 monthly report, for the period of April 1-30, 2016, under the Permit.

Specifically, this report covers the April 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical results of a discharge sample collected on April 5, 2016.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. (Note that the temporary RO unit operated through April 2016, and will be replaced in the second quarter of 2016 with the permanent unit, as authorized by OCD on April 1, 2016.)

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit for the second quarter, samples were collected for the RO reject streams from the permanent units and temporary unit on April 5, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results are provided in Attachment 2.

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates and Volumes

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
4/1/2016	68	82	151	5,163	131	4489	9,652
4/2/2016	73	87	160	5,488	133	4557	10,045
4/3/2016	73	85	159	5,443	130	4453	9,896
4/4/2016	72	81	153	5,247	134	4585	9,832
4/5/2016	0	8	8	270	146	4991	5,261
4/6/2016	0	57	57	1,958	132	4509	6,467
4/7/2016	3	8	10	356	136	4646	5,002
4/8/2016	102	36	138	4,730	141	4849	9,579
4/9/2016	111	89	200	6,867	140	4801	11,668
4/10/2016	106	90	195	6,701	134	4596	11,297
4/11/2016	113	94	207	7,090	139	4772	11,862
4/12/2016	113	92	205	7,014	145	4954	11,968
4/13/2016	111	89	200	6,873	148	5091	11,964
4/14/2016	114	102	216	7,392	155	5307	12,699
4/15/2016	109	83	191	6,553	157	5390	11,943
4/16/2016	110	83	194	6,644	149	5110	11,754
4/17/2016	113	86	199	6,824	131	4485	11,309
4/18/2016	109	81	190	6,529	119	4066	10,595
4/19/2016	103	82	186	6,365	148	5081	11,446
4/20/2016	108	85	193	6,611	152	5207	11,818
4/21/2016	108	80	188	6,434	143	4903	11,337
4/22/2016	106	82	188	6,440	137	4688	11,128
4/23/2016	87	77	164	5,616	136	4679	10,295
4/24/2016	84	81	165	5,662	139	4754	10,416
4/25/2016	66	82	149	5,096	134	4593	9,689
4/26/2016	75	88	163	5,603	131	4476	10,079
4/27/2016	82	78	159	5,460	136	4653	10,113
4/28/2016	81	73	154	5,273	139	4768	10,041
4/29/2016	84	82	166	5,708	129	4427	10,135
4/30/2016	82	81	163	5,590	126	4314	9,904

Attachment 2
Analytical Lab Report



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

May 12, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly R.O. Reject

OrderNo.: 1604184

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/6/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1604184**

Date Reported: **5/12/2016**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 4/5/2016 8:15:00 AM

Lab ID: 1604184-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	4/19/2016 6:19:56 PM	A33644
Lead	ND	0.0025		mg/L	5	4/19/2016 6:19:56 PM	A33644
Selenium	ND	0.020		mg/L	20	4/20/2016 6:29:13 PM	A33677
Uranium	0.0067	0.0025		mg/L	5	4/19/2016 6:19:56 PM	A33644
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.02	0.578		pCi/L	1	4/29/2016	R34156
Radium-226 ±	0.608	0.578		pCi/L	1	4/29/2016	R34156
Radium-228	0.143	0.803		pCi/L	1	4/29/2016	R34156
Radium-228 ±	0.361	0.803		pCi/L	1	4/29/2016	R34156
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	4.7	2.0	*	mg/L	20	4/18/2016 10:52:15 PM	R33628
Chloride	390	50		mg/L	100	4/18/2016 11:04:39 PM	R33628
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	4/7/2016 4:51:08 AM	R33368
Nitrogen, Nitrate (As N)	2.4	0.10		mg/L	1	4/7/2016 4:38:43 AM	R33368
Sulfate	2400	50		mg/L	100	4/18/2016 11:04:39 PM	R33628
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	5190	20.0	*	mg/L	1	4/7/2016 3:22:00 PM	24656
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	4/13/2016	R34156
SM4500-H+B: PH							Analyst: MRA
pH	8.17	1.68	H	pH units	1	4/9/2016 2:23:07 AM	R33424
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Barium	0.094	0.0020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Boron	0.10	0.040		mg/L	1	4/18/2016 5:43:21 PM	A33606
Cadmium	ND	0.0020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Chromium	ND	0.0060		mg/L	1	4/18/2016 5:43:21 PM	A33606
Cobalt	ND	0.0060		mg/L	1	4/18/2016 5:43:21 PM	A33606
Copper	ND	0.0060		mg/L	1	4/18/2016 5:43:21 PM	A33606
Iron	0.034	0.020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Manganese	ND	0.0020		mg/L	1	4/18/2016 5:43:21 PM	A33606
Molybdenum	ND	0.0080		mg/L	1	4/18/2016 5:43:21 PM	A33606
Nickel	ND	0.010		mg/L	1	4/18/2016 5:43:21 PM	A33606
Silver	ND	0.0050		mg/L	1	4/18/2016 5:43:21 PM	A33606
Zinc	0.027	0.010		mg/L	1	4/18/2016 5:43:21 PM	A33606
EPA METHOD 245.1: MERCURY							Analyst: pmf

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1604184

Date Reported: 5/12/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Quarterly R.O. Reject

Collection Date: 4/5/2016 8:15:00 AM

Lab ID: 1604184-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	4/15/2016 12:01:33 PM	24817
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	4/8/2016 2:39:53 PM	24682
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1221	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1232	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1242	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1248	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1254	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Aroclor 1260	ND	1.0		µg/L	1	4/19/2016 2:38:24 AM	24708
Surr: Decachlorobiphenyl	121	26.1-140		%Rec	1	4/19/2016 2:38:24 AM	24708
Surr: Tetrachloro-m-xylene	95.2	15-123		%Rec	1	4/19/2016 2:38:24 AM	24708
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	9.4	1.0		mg/L	1	4/8/2016 9:58:45 PM	24652
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/8/2016 9:58:45 PM	24652
Surr: DNOP	114	70-141		%Rec	1	4/8/2016 9:58:45 PM	24652
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/8/2016 11:55:58 AM	R33412
Surr: BFB	89.0	49.5-130		%Rec	1	4/8/2016 11:55:58 AM	R33412
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	4/19/2016 11:30:48 AM	24709
1-Methylnaphthalene	ND	2.0		µg/L	1	4/19/2016 11:30:48 AM	24709
2-Methylnaphthalene	ND	2.0		µg/L	1	4/19/2016 11:30:48 AM	24709
Benzo(a)pyrene	ND	0.070		µg/L	1	4/19/2016 11:30:48 AM	24709
Surr: Benzo(e)pyrene	74.7	33.4-129		%Rec	1	4/19/2016 11:30:48 AM	24709
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Toluene	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Ethylbenzene	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Carbon Tetrachloride	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Chloroform	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1-Dichloroethane	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1-Dichloroethene	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1604184**Date Reported: **5/12/2016****CLIENT:** Navajo Refining Company**Client Sample ID:** R.O. Reject**Project:** Quarterly R.O. Reject**Collection Date:** 4/5/2016 8:15:00 AM**Lab ID:** 1604184-001**Matrix:** AQUEOUS**Received Date:** 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
Methylene Chloride	ND	3.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Vinyl chloride	ND	1.0		µg/L	1	4/14/2016 6:30:43 PM	R33550
Xylenes, Total	ND	1.5		µg/L	1	4/14/2016 6:30:43 PM	R33550
Surr: 1,2-Dichloroethane-d4	98.3	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
Surr: Dibromofluoromethane	110	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
Surr: Toluene-d8	94.9	70-130		%Rec	1	4/14/2016 6:30:43 PM	R33550
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	4/21/2016	24923

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1604184

Date Reported: 5/12/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Quarterly R.O. Reject

Collection Date:

Lab ID: 1604184-002

Matrix: TRIP BLANK

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	4/8/2016 2:54:59 PM	24682
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/8/2016 12:20:35 PM	R33412
Surr: BFB	85.7	49.5-130		%Rec	1	4/8/2016 12:20:35 PM	R33412
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Toluene	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Ethylbenzene	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Carbon Tetrachloride	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Chloroform	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1-Dichloroethane	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1-Dichloroethene	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Methylene Chloride	ND	3.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Vinyl chloride	ND	1.0		µg/L	1	4/14/2016 6:59:37 PM	R33550
Xylenes, Total	ND	1.5		µg/L	1	4/14/2016 6:59:37 PM	R33550
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550
Surr: Dibromofluoromethane	111	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550
Surr: Toluene-d8	96.2	70-130		%Rec	1	4/14/2016 6:59:37 PM	R33550

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034060		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034061		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.46	0.020	0.5000	0	92.5	85	115			
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Boron	0.50	0.040	0.5000	0	99.1	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.2	85	115			
Copper	0.48	0.0060	0.5000	0	95.7	85	115			
Iron	0.47	0.020	0.5000	0	93.8	85	115			
Manganese	0.47	0.0020	0.5000	0	94.1	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.46	0.010	0.5000	0	91.9	85	115			
Silver	0.097	0.0050	0.1000	0	96.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.4	85	115			

Sample ID LLLCS-A	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	100	50	150			
Barium	ND	0.0020	0.002000	0	94.5	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LLLCS-A		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A33606		RunNo: 33606					
Prep Date:			Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	94.9	50	150			
Cadmium	0.0028	0.0020	0.002000	0	140	50	150			
Chromium	0.0063	0.0060	0.006000	0	105	50	150			
Cobalt	ND	0.0060	0.006000	0	92.7	50	150			
Copper	0.0090	0.0060	0.006000	0	150	50	150			S
Iron	ND	0.020	0.02000	0	98.6	50	150			
Manganese	ND	0.0020	0.002000	0	90.5	50	150			
Molybdenum	ND	0.0080	0.008000	0	99.0	50	150			
Nickel	ND	0.010	0.005000	0	86.2	50	150			
Silver	ND	0.0050	0.005000	0	92.6	50	150			
Zinc	ND	0.010	0.005000	0	108	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A33644		RunNo: 33644					
Prep Date:			Analysis Date: 4/19/2016		SeqNo: 1036133		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	93.5	85	115			
Lead	0.011	0.00050	0.01250	0	91.9	85	115			
Uranium	0.011	0.00050	0.01250	0	91.8	85	115			

Sample ID	LCSLL			SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals				
Client ID:	BatchQC			Batch ID: A33644		RunNo: 33644				
Prep Date:				Analysis Date: 4/19/2016		SeqNo: 1036134		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	105	50	150			
Uranium	ND	0.00050	0.0005000	0	99.1	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: A33644			RunNo: 33644					
Prep Date:		Analysis Date: 4/19/2016			SeqNo: 1036136		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								
Uranium	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A33677		RunNo: 33677					
Prep Date:			Analysis Date: 4/20/2016		SeqNo: 1037321		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	97.2	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A33677		RunNo: 33677					
Prep Date:			Analysis Date: 4/20/2016		SeqNo: 1037322		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0011	0.0010	0.001000	0	106	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	A33677	RunNo:	33677					
Prep Date:		Analysis Date:	4/20/2016	SeqNo:	1037323	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24817	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032804	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-24817	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032805	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R33368	RunNo:	33368					
Prep Date:		Analysis Date:	4/6/2016	SeqNo:	1025773	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R33368	RunNo:	33368					
Prep Date:		Analysis Date:	4/6/2016	SeqNo:	1025774	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R33628	RunNo:	33628					
Prep Date:		Analysis Date:	4/18/2016	SeqNo:	1035257	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:	R33628	RunNo:	33628					
Prep Date:		Analysis Date:	4/18/2016	SeqNo:	1035258	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	109	90	110			
Chloride	4.8	0.50	5.000	0	96.7	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24682		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	24682		RunNo:	33411				
Prep Date:	4/7/2016		Analysis Date:	4/8/2016		SeqNo:	1027492		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-24682		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	24682		RunNo:	33411				
Prep Date:	4/7/2016		Analysis Date:	4/8/2016		SeqNo:	1027494		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.12	0.010	0.1000	0	116	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24652		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026445		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		102	70	141			

Sample ID	LCS-24652		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026634		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027408	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	17		20.00		86.6	49.5	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R33412	RunNo:	33412					
Prep Date:		Analysis Date:	4/8/2016	SeqNo:	1027409	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	19		20.00		96.6	49.5	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24708		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034347		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.5		2.500		99.2	26.1	140			
Surr: Tetrachloro-m-xylene	2.3		2.500		93.2	15	123			

Sample ID	LCS-24708		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034348		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	6.5	1.0	5.000	0	130	15	131			
Aroclor 1260	9.4	1.0	5.000	0	189	15	162			S
Surr: Decachlorobiphenyl	5.2		2.500		208	26.1	140			S
Surr: Tetrachloro-m-xylene	5.2		2.500		208	15	123			S

Sample ID	LCSD-24708	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	24708	RunNo:	33583					
Prep Date:	4/11/2016	Analysis Date:	4/18/2016	SeqNo:	1034349	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.5	1.0	5.000	0	70.0	15	131	60.1	24.4	R
Aroclor 1260	6.1	1.0	5.000	0	123	15	162	42.3	28	R
Surr: Decachlorobiphenyl	3.3		2.500		133	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	2.9		2.500		118	15	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R33550			RunNo: 33550					
Prep Date:	Analysis Date: 4/14/2016			SeqNo: 1032303		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	99.4	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.7	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	12		10.00		117	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R33550			RunNo: 33550					
Prep Date:		Analysis Date: 4/14/2016			SeqNo: 1032305		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		112	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24709		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	24709		RunNo:	33614			
Prep Date:	4/11/2016		Analysis Date:	4/19/2016		SeqNo:	1034469	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	15		20.00		77.2	33.4	129			

Sample ID	LCS-24709		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	24709		RunNo:	33614			
Prep Date:	4/11/2016		Analysis Date:	4/19/2016		SeqNo:	1034474	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	79	2.0	80.00	0	98.3	54.6	110			
1-Methylnaphthalene	80	2.0	80.20	0	99.9	49.1	116			
2-Methylnaphthalene	81	2.0	80.00	0	101	52.5	111			
Acenaphthylene	73	2.5	80.20	0	91.0	63.7	122			
Acenaphthene	81	2.0	80.00	0	101	50.6	114			
Fluorene	8.2	0.80	8.020	0	103	48.9	106			
Phenanthrene	4.0	0.60	4.020	0	98.5	54.7	110			
Anthracene	3.7	0.60	4.020	0	92.5	52	106			
Fluoranthene	8.7	0.30	8.020	0	109	57.8	113			
Pyrene	7.6	0.30	8.020	0	95.3	59.7	118			
Benz(a)anthracene	0.88	0.070	0.8020	0	110	56.6	109			S
Chrysene	4.1	0.20	4.020	0	102	57.6	110			
Benzo(b)fluoranthene	0.91	0.10	1.002	0	90.8	54.9	106			
Benzo(k)fluoranthene	0.51	0.070	0.5000	0	102	59.3	112			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	LCS-24709		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 24709		RunNo: 33614					
Prep Date:	4/11/2016		Analysis Date: 4/19/2016		SeqNo: 1034474		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107			
Dibenz(a,h)anthracene	1.1	0.12	1.002	0	106	54.8	108			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	105	56.9	110			
Indeno(1,2,3-cd)pyrene	2.3	0.25	2.004	0	113	55.2	109			S
Surr: Benzo(e)pyrene	11		20.00		53.7	33.4	129			

Sample ID	LCSD-24709		SampType: LCSD		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS02		Batch ID: 24709		RunNo: 33614					
Prep Date:	4/11/2016		Analysis Date: 4/19/2016		SeqNo: 1034484		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	76	2.0	80.00	0	94.6	54.6	110	3.77	20	
1-Methylnaphthalene	74	2.0	80.20	0	92.8	49.1	116	7.35	20	
2-Methylnaphthalene	73	2.0	80.00	0	91.6	52.5	111	9.80	20	
Acenaphthylene	70	2.5	80.20	0	87.3	63.7	122	4.19	20	
Acenaphthene	73	2.0	80.00	0	91.4	50.6	114	10.4	20	
Fluorene	6.6	0.80	8.020	0	82.8	48.9	106	21.4	20	R
Phenanthrene	3.8	0.60	4.020	0	95.0	54.7	110	3.60	24	
Anthracene	3.6	0.60	4.020	0	88.6	52	106	4.40	20	
Fluoranthene	8.4	0.30	8.020	0	104	57.8	113	3.98	20.9	
Pyrene	7.3	0.30	8.020	0	91.5	59.7	118	4.01	20.8	
Benz(a)anthracene	0.85	0.070	0.8020	0	106	56.6	109	3.47	20	
Chrysene	4.0	0.20	4.020	0	98.8	57.6	110	3.47	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.9	106	5.65	20.6	
Benzo(k)fluoranthene	0.49	0.070	0.5000	0	98.0	59.3	112	4.00	20.8	
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107	3.85	20	
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	101	54.8	108	4.83	20	
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	100	56.9	110	4.88	20	
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109	7.78	20	
Surr: Benzo(e)pyrene	10		20.00		51.5	33.4	129	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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24923	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	24923	RunNo:	33678					
Prep Date:	4/21/2016	Analysis Date:	4/21/2016	SeqNo:	1037376	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-24923	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	24923	RunNo:	33678					
Prep Date:	4/21/2016	Analysis Date:	4/21/2016	SeqNo:	1037377	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	89.0	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R34156		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R34156		RunNo:	34156				
Prep Date:			Analysis Date:	4/13/2016		SeqNo:	1053134	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R34156			SampType:	LCS			TestCode:	EPA 335.4: Total Cyanide Subbed		
Client ID:	LCSW			Batch ID:	R34156			RunNo:	34156		
Prep Date:				Analysis Date:	4/13/2016			SeqNo:	1053135	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.507		0.5000	0	101	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-R34156		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R34156		RunNo:	34156			
Prep Date:			Analysis Date:	4/29/2016		SeqNo:	1053137	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-2.01	0.933								
Radium-226 ±	0.459	0.933								
Radium-228	0.321	0.795								
Radium-228 ±	0.376	0.795								

Qualifiers:

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

B Analyte detected in the 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#: 1604184

12-May-16

Client: Navajo Refining Company

Project: Quarterly R.O. Reject

Sample ID	MB-24656		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	24656		RunNo:	33372				
Prep Date:	4/6/2016		Analysis Date:	4/7/2016		SeqNo:	1025974		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-24656		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 24656		RunNo: 33372					
Prep Date:	4/6/2016		Analysis Date: 4/7/2016		SeqNo: 1025975		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1040	20.0	1000	0	104	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample 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
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: NAVAJO REFINING CO

Work Order Number: 1604184

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/6/2016 9:40:00 AM

Completed By: Ashley Gallegos

4/6/2016 12:24:03 PM

Reviewed By:

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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: 6
(2 or 12 unless noted)
Adjusted? NO
Checked by: AS

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Quarterly RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Brady Hubbard
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	4/5/2016 @ 8:05 a.m.
End Date and Time	4/5/2016 @ 8:30 a.m.

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>
Parts / Sample Intervals	One

Physical Property	Solid <input type="checkbox"/>
	Liquid <input checked="" type="checkbox"/>
	Sludge <input type="checkbox"/>
Type of Sampler	Directly to sample jars

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Container	Size	Material	Total Containers	Preservatives							Analysis and/or Method Requested
				NaOH	HNO ₃	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	NaHSO ₄	Other	
1	500ml	Plastic	2	X		X					pH, Cl, F, SO ₄ , NO ₂ /NO ₃ , TDS
2	40ml	VOA	3								8015 GRO
3	500ml	Plastic	1		X						6020 total metals, 7470 Hg
4	125ml	Plastic	1		X						6020 Dissolved Metals
5	500ml	Plastic	2				X				Cyanide
6	1L	Plastic	3		X						Radium 226/228
7	40ml	VOA	2								8260 see attached list
8	1L	Glass	1	X							8270 see attached list
9	1L	Glass	2	X							8082 PCBs
10	40ml	VOA	2	X							8015 DRO
11	40ml	VOA	2	X							Radium 226/228

Storage Method	Ice <input checked="" type="checkbox"/>
	Refrigerated <input type="checkbox"/>
	Other <input type="checkbox"/>

Shipping Media	Ice <input checked="" type="checkbox"/>
	Other <input type="checkbox"/>

Field Data (Weather, Observations, Etc.)	4/5/2016 Temp 55.4 °F, Humidity 41%, Wind Dir. SE, Wind Speed 4.6mph, Conditions Clear
Date and Time	
Field Temp 23.6C	Field pH 7.05



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

May 10, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Quarterly Temporary R.O. Reject

OrderNo.: 1604182

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/6/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1604182**

Date Reported: **5/10/2016**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Quarterly Temporary R.O. Reject

Collection Date: 4/5/2016 7:45:00 AM

Lab ID: 1604182-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8011/504.1: EDB						
						Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	4/8/2016 2:24:54 PM
EPA METHOD 8082: PCB'S						
						Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Aroclor 1221	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Aroclor 1232	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Aroclor 1242	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Aroclor 1248	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Aroclor 1254	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Aroclor 1260	ND	1.0		µg/L	1	4/19/2016 2:04:17 AM
Surr: Decachlorobiphenyl	106	26.1-140		%Rec	1	4/19/2016 2:04:17 AM
Surr: Tetrachloro-m-xylene	74.4	15-123		%Rec	1	4/19/2016 2:04:17 AM
EPA METHOD 8015M/D: DIESEL RANGE						
						Analyst: KJH
Diesel Range Organics (DRO)	2.4	1.0		mg/L	1	4/8/2016 9:37:25 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/8/2016 9:37:25 PM
Surr: DNOP	114	70-141		%Rec	1	4/8/2016 9:37:25 PM
EPA METHOD 8015D: GASOLINE RANGE						
						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/8/2016 10:42:12 AM
Surr: BFB	84.7	49.5-130		%Rec	1	4/8/2016 10:42:12 AM
EPA METHOD 8310: PAHS						
						Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	4/19/2016 11:01:30 AM
1-Methylnaphthalene	ND	2.0		µg/L	1	4/19/2016 11:01:30 AM
2-Methylnaphthalene	ND	2.0		µg/L	1	4/19/2016 11:01:30 AM
Benzo(a)pyrene	ND	0.070		µg/L	1	4/19/2016 11:01:30 AM
Surr: Benzo(e)pyrene	101	33.4-129		%Rec	1	4/19/2016 11:01:30 AM
EPA METHOD 300.0: ANIONS						
						Analyst: LGT
Fluoride	1.9	0.10		mg/L	1	4/18/2016 10:02:35 PM
Chloride	55	10		mg/L	20	4/7/2016 5:15:57 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/7/2016 5:03:33 AM
Nitrogen, Nitrate (As N)	1.0	0.10		mg/L	1	4/7/2016 5:03:33 AM
Sulfate	880	25		mg/L	50	4/18/2016 10:15:00 PM
EPA METHOD 200.7: DISSOLVED METALS						
						Analyst: ELS
Aluminum	ND	0.020		mg/L	1	4/18/2016 5:39:41 PM
Barium	0.040	0.0020		mg/L	1	4/18/2016 5:39:41 PM
Boron	0.052	0.040		mg/L	1	4/18/2016 5:39:41 PM
Cadmium	ND	0.0020		mg/L	1	4/18/2016 5:39:41 PM
Chromium	ND	0.0060		mg/L	1	4/18/2016 5:39:41 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1604182**

Date Reported: **5/10/2016**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Quarterly Temporary R.O. Reject

Collection Date: 4/5/2016 7:45:00 AM

Lab ID: 1604182-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Cobalt	ND	0.0060		mg/L	1	4/18/2016 5:39:41 PM
Copper	ND	0.0060		mg/L	1	4/18/2016 5:39:41 PM
Iron	0.051	0.020		mg/L	1	4/18/2016 5:39:41 PM
Manganese	ND	0.0020		mg/L	1	4/18/2016 5:39:41 PM
Molybdenum	ND	0.0080		mg/L	1	4/18/2016 5:39:41 PM
Nickel	ND	0.010		mg/L	1	4/18/2016 5:39:41 PM
Silver	ND	0.0050		mg/L	1	4/18/2016 5:39:41 PM
Zinc	0.032	0.010		mg/L	1	4/18/2016 5:39:41 PM
EPA 200.8: DISSOLVED METALS						Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	4/19/2016 6:16:53 PM
Lead	ND	0.00050		mg/L	1	4/19/2016 2:29:28 PM
Selenium	ND	0.0050		mg/L	5	4/20/2016 6:26:09 PM
Uranium	0.0029	0.00050		mg/L	1	4/19/2016 2:29:28 PM
EPA METHOD 245.1: MERCURY						Analyst: pmf
Mercury	ND	0.00020		mg/L	1	4/15/2016 11:59:33 AM
EPA METHOD 8260B: VOLATILES						Analyst: AG
Benzene	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Toluene	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Ethylbenzene	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Chloroform	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Methylene Chloride	ND	3.0		µg/L	1	4/14/2016 6:01:59 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/14/2016 6:01:59 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Vinyl chloride	ND	1.0		µg/L	1	4/14/2016 6:01:59 PM
Xylenes, Total	ND	1.5		µg/L	1	4/14/2016 6:01:59 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	4/14/2016 6:01:59 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	4/14/2016 6:01:59 PM
Surr: Dibromofluoromethane	117	70-130		%Rec	1	4/14/2016 6:01:59 PM
Surr: Toluene-d8	103	70-130		%Rec	1	4/14/2016 6:01:59 PM

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

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Project: Quarterly Temporary R.O. Reject

Collection Date: 4/5/2016 7:45:00 AM

Lab ID: 1604182-001

Matrix: AQUEOUS

Received Date: 4/6/2016 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	4/21/2016
EPA 335.4: TOTAL CYANIDE SUBBED						Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	4/8/2016
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED						Analyst: SUB
Radium-226	5.67	0.512		pCi/L	1	4/26/2016 7:54:00 PM
Radium-226 ±	2.13	0.512		pCi/L	1	4/26/2016 7:54:00 PM
Radium-228	0.76	0.949		pCi/L	1	4/26/2016 7:54:00 PM
Radium-228 ±	0.5	0.949		pCi/L	1	4/26/2016 7:54:00 PM
SM4500-H+B: PH						Analyst: MRA
pH	8.26	1.68	H	pH units	1	4/9/2016 2:18:47 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	1870	20.0	*	mg/L	1	4/7/2016 3:22:00 PM

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034060		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034061		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.46	0.020	0.5000	0	92.5	85	115			
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Boron	0.50	0.040	0.5000	0	99.1	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.2	85	115			
Copper	0.48	0.0060	0.5000	0	95.7	85	115			
Iron	0.47	0.020	0.5000	0	93.8	85	115			
Manganese	0.47	0.0020	0.5000	0	94.1	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.46	0.010	0.5000	0	91.9	85	115			
Silver	0.097	0.0050	0.1000	0	96.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.4	85	115			

Sample ID LLLCS-A	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A33606		RunNo: 33606							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	100	50	150			
Barium	ND	0.0020	0.002000	0	94.5	50	150			

Qualifiers:

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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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	LLLCS-A		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A33606		RunNo: 33606					
Prep Date:			Analysis Date: 4/18/2016		SeqNo: 1034062		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	94.9	50	150			
Cadmium	0.0028	0.0020	0.002000	0	140	50	150			
Chromium	0.0063	0.0060	0.006000	0	105	50	150			
Cobalt	ND	0.0060	0.006000	0	92.7	50	150			
Copper	0.0090	0.0060	0.006000	0	150	50	150			S
Iron	ND	0.020	0.02000	0	98.6	50	150			
Manganese	ND	0.0020	0.002000	0	90.5	50	150			
Molybdenum	ND	0.0080	0.008000	0	99.0	50	150			
Nickel	ND	0.010	0.005000	0	86.2	50	150			
Silver	ND	0.0050	0.005000	0	92.6	50	150			
Zinc	ND	0.010	0.005000	0	108	50	150			

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A33635			RunNo: 33635						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1035657		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	100	85	115			
Uranium	0.012	0.00050	0.01250	0	97.5	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A33635			RunNo: 33635						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1035658		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00054	0.00050	0.0005000	0	107	50	150			
Uranium	ND	0.00050	0.0005000	0	97.6	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A33635			RunNo: 33635						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1035659		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A33644			RunNo: 33644						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1036133		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	93.5	85	115			

Sample ID LCSLL	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A33644			RunNo: 33644						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1036134		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A33644			RunNo: 33644						
Prep Date:	Analysis Date: 4/19/2016			SeqNo: 1036136		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

- | | |
|---|---|
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10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A33677			RunNo: 33677						
Prep Date:	Analysis Date: 4/20/2016			SeqNo: 1037321		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	97.2	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A33677			RunNo: 33677						
Prep Date:	Analysis Date: 4/20/2016			SeqNo: 1037322		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.0011	0.0010	0.001000	0	106	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A33677			RunNo: 33677						
Prep Date:	Analysis Date: 4/20/2016			SeqNo: 1037323		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Qualifiers:

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QC SUMMARY REPORT

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WO#: 1604182

10-May-16

Client: Navajo Refining Company
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Sample ID	MB-24817	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032804	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-24817	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	24817	RunNo:	33567					
Prep Date:	4/14/2016	Analysis Date:	4/15/2016	SeqNo:	1032805	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	80	120			

Qualifiers:

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10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R33368		RunNo: 33368							
Prep Date:	Analysis Date: 4/6/2016		SeqNo: 1025773		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R33368		RunNo: 33368							
Prep Date:	Analysis Date: 4/6/2016		SeqNo: 1025774		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	97.0	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R33628		RunNo: 33628							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1035257		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: R33628		RunNo: 33628							
Prep Date:	Analysis Date: 4/18/2016		SeqNo: 1035258		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	109	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24682		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	24682		RunNo:	33411				
Prep Date:	4/7/2016		Analysis Date:	4/8/2016		SeqNo:	1027492		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-24682			SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB			
Client ID:	LCSW			Batch ID:	24682		RunNo:	33411			
Prep Date:	4/7/2016			Analysis Date:	4/8/2016		SeqNo:	1027494		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.12	0.010	0.1000	0	116	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#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24652		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026445		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		102	70	141			

Sample ID	LCS-24652		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24652		RunNo: 33385					
Prep Date:	4/6/2016		Analysis Date: 4/8/2016		SeqNo: 1026634		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R33412		RunNo: 33412							
Prep Date:	Analysis Date: 4/8/2016		SeqNo: 1027408		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	17		20.00		86.6	49.5	130			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R33412		RunNo: 33412							
Prep Date:	Analysis Date: 4/8/2016		SeqNo: 1027409		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	19		20.00		96.6	49.5	130			

Sample ID 1604182-001BMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: Temporary R.O. Rej	Batch ID: R33412		RunNo: 33412							
Prep Date:	Analysis Date: 4/8/2016		SeqNo: 1027412		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	70	130			
Surr: BFB	20		20.00		98.2	49.5	130			

Sample ID 1604182-001BMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: Temporary R.O. Rej	Batch ID: R33412		RunNo: 33412							
Prep Date:	Analysis Date: 4/8/2016		SeqNo: 1027413		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.6	70	130	0.884	20	
Surr: BFB	20		20.00		99.5	49.5	130	0	0	

Qualifiers:

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

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24708		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034347		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.5		2.500		99.2	26.1	140			
Surr: Tetrachloro-m-xylene	2.3		2.500		93.2	15	123			

Sample ID	LCS-24708		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 24708		RunNo: 33583					
Prep Date:	4/11/2016		Analysis Date: 4/18/2016		SeqNo: 1034348		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	6.5	1.0	5.000	0	130	15	131			
Aroclor 1260	9.4	1.0	5.000	0	189	15	162			S
Surr: Decachlorobiphenyl	5.2		2.500		208	26.1	140			S
Surr: Tetrachloro-m-xylene	5.2		2.500		208	15	123			S

Sample ID	LCSD-24708	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	24708	RunNo:	33583					
Prep Date:	4/11/2016	Analysis Date:	4/18/2016	SeqNo:	1034349	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.5	1.0	5.000	0	70.0	15	131	60.1	24.4	R
Aroclor 1260	6.1	1.0	5.000	0	123	15	162	42.3	28	R
Surr: Decachlorobiphenyl	3.3		2.500		133	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	2.9		2.500		118	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R33550			RunNo: 33550					
Prep Date:		Analysis Date: 4/14/2016			SeqNo: 1032303		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	99.4	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.7	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	12		10.00		117	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R33550			RunNo: 33550					
Prep Date:		Analysis Date: 4/14/2016			SeqNo: 1032305		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	10		10.00		101	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#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID MB-24709	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 24709		RunNo: 33614							
Prep Date: 4/11/2016	Analysis Date: 4/19/2016		SeqNo: 1034469		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	15		20.00		77.2	33.4	129			

Sample ID LCS-24709	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 24709		RunNo: 33614							
Prep Date: 4/11/2016	Analysis Date: 4/19/2016		SeqNo: 1034474		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	79	2.0	80.00	0	98.3	54.6	110			
1-Methylnaphthalene	80	2.0	80.20	0	99.9	49.1	116			
2-Methylnaphthalene	81	2.0	80.00	0	101	52.5	111			
Acenaphthylene	73	2.5	80.20	0	91.0	63.7	122			
Acenaphthene	81	2.0	80.00	0	101	50.6	114			
Fluorene	8.2	0.80	8.020	0	103	48.9	106			
Phenanthrene	4.0	0.60	4.020	0	98.5	54.7	110			
Anthracene	3.7	0.60	4.020	0	92.5	52	106			
Fluoranthene	8.7	0.30	8.020	0	109	57.8	113			
Pyrene	7.6	0.30	8.020	0	95.3	59.7	118			
Benz(a)anthracene	0.88	0.070	0.8020	0	110	56.6	109			S
Chrysene	4.1	0.20	4.020	0	102	57.6	110			
Benzo(b)fluoranthene	0.91	0.10	1.002	0	90.8	54.9	106			
Benzo(k)fluoranthene	0.51	0.070	0.5000	0	102	59.3	112			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	LCS-24709		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 24709		RunNo: 33614					
Prep Date:	4/11/2016		Analysis Date: 4/19/2016		SeqNo: 1034474		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107			
Dibenz(a,h)anthracene	1.1	0.12	1.002	0	106	54.8	108			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	105	56.9	110			
Indeno(1,2,3-cd)pyrene	2.3	0.25	2.004	0	113	55.2	109			S
Surr: Benzo(e)pyrene	11		20.00		53.7	33.4	129			

Sample ID	LCSD-24709		SampType: LCSD		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS02		Batch ID: 24709		RunNo: 33614					
Prep Date:	4/11/2016		Analysis Date: 4/19/2016		SeqNo: 1034484		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	76	2.0	80.00	0	94.6	54.6	110	3.77	20	
1-Methylnaphthalene	74	2.0	80.20	0	92.8	49.1	116	7.35	20	
2-Methylnaphthalene	73	2.0	80.00	0	91.6	52.5	111	9.80	20	
Acenaphthylene	70	2.5	80.20	0	87.3	63.7	122	4.19	20	
Acenaphthene	73	2.0	80.00	0	91.4	50.6	114	10.4	20	
Fluorene	6.6	0.80	8.020	0	82.8	48.9	106	21.4	20	R
Phenanthrene	3.8	0.60	4.020	0	95.0	54.7	110	3.60	24	
Anthracene	3.6	0.60	4.020	0	88.6	52	106	4.40	20	
Fluoranthene	8.4	0.30	8.020	0	104	57.8	113	3.98	20.9	
Pyrene	7.3	0.30	8.020	0	91.5	59.7	118	4.01	20.8	
Benz(a)anthracene	0.85	0.070	0.8020	0	106	56.6	109	3.47	20	
Chrysene	4.0	0.20	4.020	0	98.8	57.6	110	3.47	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.9	106	5.65	20.6	
Benzo(k)fluoranthene	0.49	0.070	0.5000	0	98.0	59.3	112	4.00	20.8	
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107	3.85	20	
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	101	54.8	108	4.83	20	
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	100	56.9	110	4.88	20	
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109	7.78	20	
Surr: Benzo(e)pyrene	10		20.00		51.5	33.4	129	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24923	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	24923	RunNo:	33678					
Prep Date:	4/21/2016	Analysis Date:	4/21/2016	SeqNo:	1037376	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-24923	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	24923	RunNo:	33678					
Prep Date:	4/21/2016	Analysis Date:	4/21/2016	SeqNo:	1037377	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	89.0	64.4	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	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-R34094			SampType:	MBLK			TestCode:	EPA 335.4: Total Cyanide Subbed		
Client ID:	PBW			Batch ID:	R34094			RunNo:	34094		
Prep Date:				Analysis Date:	4/8/2016			SeqNo:	1050918	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R34094		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R34094		RunNo: 34094					
Prep Date:			Analysis Date: 4/8/2016		SeqNo: 1050919		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.512		0.5000	0	102	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-R34094		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R34094		RunNo:	34094			
Prep Date:			Analysis Date:	4/26/2016		SeqNo:	1050921	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.965	0.799								
Radium-226 ±	0.644	0.799								
Radium-228	0.0941	0.772								
Radium-228 ±	0.341	0.772								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1604182

10-May-16

Client: Navajo Refining Company
Project: Quarterly Temporary R.O. Reject

Sample ID	MB-24656		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	24656		RunNo:	33372				
Prep Date:	4/6/2016		Analysis Date:	4/7/2016		SeqNo:	1025974		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-24656		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 24656		RunNo: 33372					
Prep Date:	4/6/2016		Analysis Date: 4/7/2016		SeqNo: 1025975		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1040	20.0	1000	0	104	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1604182

RcptNo: 1

Received by/date:

Am 04/06/16

Logged By: Ashley Gallegos

4/6/2016 9:40:00 AM

Ag

Completed By: Ashley Gallegos

4/6/2016 12:16:42 PM

Ag

Reviewed By:

Ag/SA 04/06/16

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? *as* Yes ☒ No ☒
9. Was preservative added to bottles? Yes ☒ No ☒ *as* 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: 6
(2 or >12 unless noted)
Adjusted? yes
Checked by: as

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 HNO₃ to -0016 for acceptable pH*

Cooler Information

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

4/7 @ 1150
as



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Quarterly Temporary RO Reject Sample Details



The HollyFrontier Companies

Project Name		Biannual RO Reject	
Samplers Name		Brady Hubbard	
Samplers Affiliation		Navajo Refining Co. LLC	
Start Date and Time		4/5/2016 @ 7:30 a.m.	
End Date and Time		4/5/2016 @ 8:00 a.m.	

Sample Type	
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Parts / Sample Intervals	
One	

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Container	Size	Material	# of Containers	Neat (None)	Preservatives						Analysis and/or Method Requested
					HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	
1	500ml	Plastic	2	X		X					pH, Cl, F, S04, NO2NO3, TDS
2	40ml	VOA	3		X						8015 GRO
3	500ml	Plastic	1		X						6020 total metals, 7470 Hg
4	125ml	Plastic	1		X						6020 Dissolved Metals
5	500ml	Plastic	2				X				Cyanide
6	1L	Plastic	3		X						Radium 226/228
7	40ml	VOA	2		X						3260 see attached list
8	1L	Glass	1	X							8270 see attached list
9	1L	Glass	2	X							8082 PCBs
10	40ml	VOA	2	X							8015 DRO
11	40ml	VOA	2	X							Radium 226/228

Field Data (Weather, Observations, Etc)		4/5/2016 Tmp. 48.2 °F, Humidity 46%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time		

Field Temp. 23.6C Field pH 7.05

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



April 14, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – March 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's March 2016 monthly report, for the period of March 1-31, 2016, under the Permit.

Specifically, this report covers the March 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit, which were collected as required by Condition 4.B.4.
- Analytical results of a discharge sample collected on March 3, 2016.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge rates and volumes are provided in Attachment 1. (Note that the temporary RO unit operated through March 2016, and will be replaced in the second quarter of 2016 with the permanent unit, as authorized by OCD on April 1, 2016.)

To satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit, samples were collected for the RO reject streams from the permanent units and temporary unit on March 3, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). The corresponding analytical results are provided in Attachment 2.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Analytical Lab Report

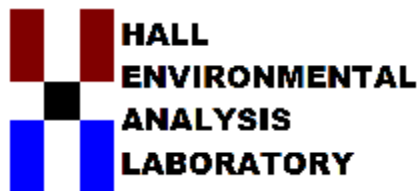
cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	SOUTH	NORTH					
3/1/2016	79	109	188	6434	119	4080	10,514
3/2/2016	76	108	184	6293	66	2280	8,573
3/3/2016	74	108	181	6217	116	3969	10,186
3/4/2016	95	103	198	6788	124	4261	11,049
3/5/2016	92	108	200	6862	126	4309	11,171
3/6/2016	91	110	201	6897	125	4291	11,188
3/7/2016	93	108	201	6887	120	4120	11,007
3/8/2016	90	110	200	6855	125	4281	11,136
3/9/2016	84	110	194	6656	123	4220	10,876
3/10/2016	79	107	187	6397	122	4183	10,580
3/11/2016	75	109	184	6316	122	4183	10,499
3/12/2016	76	105	180	6180	128	4392	10,572
3/13/2016	76	107	182	6249	64	2197	8,446
3/14/2016	85	108	193	6611	95	3269	9,880
3/15/2016	86	87	173	5944	128	4392	10,336
3/16/2016	91	107	197	6771	112	3849	10,620
3/17/2016	94	105	199	6832	63	2172	9,004
3/18/2016	90	105	195	6698	97	3333	10,031
3/19/2016	88	101	189	6466	126	4322	10,788
3/20/2016	92	94	186	6363	127	4363	10,726
3/21/2016	92	103	195	6686	127	4354	11,040
3/22/2016	92	94	186	6385	130	4458	10,843
3/23/2016	93	94	187	6413	132	4512	10,925
3/24/2016	90	101	191	6545	130	4441	10,986
3/25/2016	92	95	188	6430	135	4639	11,069
3/26/2016	94	94	188	6432	140	4800	11,232
3/27/2016	92	100	192	6591	133	4547	11,138
3/28/2016	94	87	182	6230	129	4417	10,647
3/29/2016	92	105	197	6741	128	4405	11,146
3/30/2016	59	72	132	4509	132	4541	9,050
3/31/2016	71	82	153	5236	133	4550	9,786

Attachment 2
Analytical Lab Report



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

April 01, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly R.O. Reject

OrderNo.: 1603242

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/4/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1603242**

Date Reported: **4/1/2016**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 3/3/2016 9:45:00 AM

Lab ID: 1603242-001

Matrix: AQUEOUS

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8011/504.1: EDB Analyst: JME						
1,2-Dibromoethane	ND	0.010		µg/L	1	3/7/2016 4:42:17 PM
EPA METHOD 8082: PCB'S Analyst: SCC						
Aroclor 1016	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Aroclor 1221	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Aroclor 1232	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Aroclor 1242	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Aroclor 1248	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Aroclor 1254	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Aroclor 1260	ND	1.0		µg/L	1	3/11/2016 2:01:36 PM
Surr: Decachlorobiphenyl	100	26.1-140		%Rec	1	3/11/2016 2:01:36 PM
Surr: Tetrachloro-m-xylene	119	15-123		%Rec	1	3/11/2016 2:01:36 PM
EPA METHOD 8015M/D: DIESEL RANGE Analyst: KJH						
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/7/2016 5:37:40 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/7/2016 5:37:40 PM
Surr: DNOP	102	70-141		%Rec	1	3/7/2016 5:37:40 PM
EPA METHOD 8015D: GASOLINE RANGE Analyst: NSB						
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/4/2016 9:22:09 PM
Surr: BFB	92.5	49.5-130		%Rec	1	3/4/2016 9:22:09 PM
EPA METHOD 8310: PAHS Analyst: SCC						
Naphthalene	ND	2.0		µg/L	1	3/17/2016 12:56:02 PM
1-Methylnaphthalene	ND	2.0		µg/L	1	3/17/2016 12:56:02 PM
2-Methylnaphthalene	ND	2.0		µg/L	1	3/17/2016 12:56:02 PM
Benzo(a)pyrene	ND	0.070		µg/L	1	3/17/2016 12:56:02 PM
Surr: Benzo(e)pyrene	75.2	33.4-129		%Rec	1	3/17/2016 12:56:02 PM
EPA METHOD 300.0: ANIONS Analyst: JRR						
Fluoride	3.5	2.0		mg/L	20	3/4/2016 3:03:27 PM
Chloride	370	10		mg/L	20	3/4/2016 3:03:27 PM
Nitrogen, Nitrate (As N)	2.2	0.10		mg/L	1	3/4/2016 2:51:02 PM
Sulfate	1900	25		mg/L	50	3/18/2016 3:05:33 AM
EPA METHOD 200.7: DISSOLVED METALS Analyst: ELS						
Aluminum	ND	0.020		mg/L	1	3/18/2016 6:31:34 PM
Barium	0.069	0.0020		mg/L	1	3/18/2016 6:31:34 PM
Boron	0.093	0.040		mg/L	1	3/18/2016 6:31:34 PM
Cadmium	ND	0.0020		mg/L	1	3/18/2016 6:31:34 PM
Chromium	ND	0.0060		mg/L	1	3/18/2016 6:31:34 PM
Cobalt	ND	0.0060		mg/L	1	3/18/2016 6:31:34 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1603242

Date Reported: 4/1/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 3/3/2016 9:45:00 AM

Lab ID: 1603242-001

Matrix: AQUEOUS

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Copper	ND	0.0060		mg/L	1	3/18/2016 6:31:34 PM
Iron	ND	0.020		mg/L	1	3/18/2016 6:31:34 PM
Manganese	ND	0.0020		mg/L	1	3/18/2016 6:31:34 PM
Molybdenum	0.0099	0.0080		mg/L	1	3/18/2016 6:31:34 PM
Nickel	ND	0.010		mg/L	1	3/18/2016 6:31:34 PM
Silver	ND	0.0050		mg/L	1	3/18/2016 6:31:34 PM
Zinc	0.014	0.010		mg/L	1	3/18/2016 6:31:34 PM
EPA 200.8: DISSOLVED METALS						Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	3/29/2016 5:36:33 PM
Lead	ND	0.0025		mg/L	5	3/29/2016 5:36:33 PM
Selenium	0.0093	0.0050		mg/L	5	3/29/2016 5:36:33 PM
Uranium	0.0058	0.0025		mg/L	5	3/29/2016 5:36:33 PM
EPA METHOD 245.1: MERCURY						Analyst: pmf
Mercury	ND	0.00020		mg/L	1	3/10/2016 11:32:03 AM
EPA METHOD 8260B: VOLATILES						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Toluene	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Ethylbenzene	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Chloroform	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Methylene Chloride	ND	3.0		µg/L	1	3/11/2016 7:47:26 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/11/2016 7:47:26 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Vinyl chloride	ND	1.0		µg/L	1	3/11/2016 7:47:26 PM
Xylenes, Total	ND	1.5		µg/L	1	3/11/2016 7:47:26 PM
Surr: 1,2-Dichloroethane-d4	97.6	70-130		%Rec	1	3/11/2016 7:47:26 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	3/11/2016 7:47:26 PM
Surr: Dibromofluoromethane	94.2	70-130		%Rec	1	3/11/2016 7:47:26 PM
Surr: Toluene-d8	92.0	70-130		%Rec	1	3/11/2016 7:47:26 PM

TOTAL PHENOLICS BY SW-846 9067

Analyst: SCC

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1603242**

Date Reported: **4/1/2016**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 3/3/2016 9:45:00 AM

Lab ID: 1603242-001

Matrix: AQUEOUS

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	3/8/2016
EPA 335.4: TOTAL CYANIDE SUBBED						Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	3/16/2016
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED						Analyst: SUB
Radium-226	1.08	0.770		pCi/L	1	3/18/2016 10:42:00 AM
Radium-226 ±	0.67	0.770		pCi/L	1	3/18/2016 10:42:00 AM
Radium-228	0.451	0.810		pCi/L	1	3/18/2016 10:42:00 AM
Radium-228 ±	0.39	0.810		pCi/L	1	3/18/2016 10:42:00 AM
SM4500-H+B: PH						Analyst: JRR
pH	8.02	1.68	H	pH units	1	3/7/2016 7:54:14 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	4030	20.0	*	mg/L	1	3/9/2016 11:47:00 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1603242

Date Reported: 4/1/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1603242-002

Matrix: TRIP BLANK

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8011/504.1: EDB						Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	3/7/2016 4:57:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/4/2016 9:46:30 PM
Surr: BFB	88.1	49.5-130		%Rec	1	3/4/2016 9:46:30 PM
EPA METHOD 8260B: VOLATILES						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Toluene	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Ethylbenzene	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Chloroform	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Methylene Chloride	ND	3.0		µg/L	1	3/11/2016 8:15:43 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/11/2016 8:15:43 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Vinyl chloride	ND	1.0		µg/L	1	3/11/2016 8:15:43 PM
Xylenes, Total	ND	1.5		µg/L	1	3/11/2016 8:15:43 PM
Surr: 1,2-Dichloroethane-d4	98.7	70-130		%Rec	1	3/11/2016 8:15:43 PM
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	3/11/2016 8:15:43 PM
Surr: Dibromofluoromethane	97.7	70-130		%Rec	1	3/11/2016 8:15:43 PM
Surr: Toluene-d8	99.6	70-130		%Rec	1	3/11/2016 8:15:43 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C32891		RunNo: 32891							
Prep Date:	Analysis Date: 3/18/2016		SeqNo: 1008301		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C32891		RunNo: 32891							
Prep Date:	Analysis Date: 3/18/2016		SeqNo: 1008302		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.50	0.0020	0.5000	0	99.1	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.8	85	115			
Copper	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Manganese	0.49	0.0020	0.5000	0	97.8	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.3	85	115			

Sample ID LLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C32891		RunNo: 32891							
Prep Date:	Analysis Date: 3/18/2016		SeqNo: 1008303		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	111	50	150			
Barium	0.0021	0.0020	0.002000	0	103	50	150			
Boron	ND	0.040	0.04000	0	97.7	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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C32891		RunNo: 32891					
Prep Date:			Analysis Date: 3/18/2016		SeqNo: 1008303		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020	0.002000	0	99.5	50	150			
Chromium	ND	0.0060	0.006000	0	87.8	50	150			
Cobalt	ND	0.0060	0.006000	0	85.3	50	150			
Copper	0.0068	0.0060	0.006000	0	114	50	150			
Iron	0.021	0.020	0.02000	0	103	50	150			
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Molybdenum	0.0097	0.0080	0.008000	0	121	50	150			
Nickel	ND	0.010	0.005000	0	98.6	50	150			
Silver	ND	0.0050	0.005000	0	76.2	50	150			
Zinc	ND	0.010	0.005000	0	100	50	150			

Sample ID	LCS-C		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: C32891		RunNo: 32891					
Prep Date:			Analysis Date: 3/18/2016		SeqNo: 1008305		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	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	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B33154		RunNo: 33154					
Prep Date:			Analysis Date: 3/29/2016		SeqNo: 1018089		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			
Lead	0.012	0.00050	0.01250	0	95.4	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.011	0.00050	0.01250	0	91.8	85	115			

Sample ID	LLCS			SampType:	LCSLL			TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC			Batch ID:	B33154			RunNo:	33154					
Prep Date:				Analysis Date:	3/29/2016			SeqNo:	1018090			Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Arsenic	ND	0.0010	0.001000	0	98.0	50	150							
Lead	0.00050	0.00050	0.0005000	0	100	50	150							
Selenium	ND	0.0010	0.001000	0	94.9	50	150							
Uranium	ND	0.00050	0.0005000	0	91.1	50	150							

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B33154			RunNo: 33154					
Prep Date:		Analysis Date: 3/29/2016			SeqNo: 1018091		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								
Uranium	ND	0.00050								

Qualifiers:

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

B Analyte detected in the 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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-24156		SampType:	mblik		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	24156		RunNo:	32702				
Prep Date:	3/9/2016		Analysis Date:	3/10/2016		SeqNo:	1000942		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-24156		SampType: lcs		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 24156		RunNo: 32702					
Prep Date:	3/9/2016		Analysis Date: 3/10/2016		SeqNo: 1000945		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	109	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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R32618	RunNo:	32618					
Prep Date:		Analysis Date:	3/4/2016	SeqNo:	997926	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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R32618	RunNo:	32618					
Prep Date:		Analysis Date:	3/4/2016	SeqNo:	997927	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	101	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R32879	RunNo:	32879					
Prep Date:		Analysis Date:	3/17/2016	SeqNo:	1007965	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R32879	RunNo:	32879					
Prep Date:		Analysis Date:	3/17/2016	SeqNo:	1007966	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.5	0.50	10.00	0	94.6	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-24100	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	24100	RunNo:	32621					
Prep Date:	3/7/2016	Analysis Date:	3/7/2016	SeqNo:	998470	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-24100	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	24100	RunNo:	32621					
Prep Date:	3/7/2016	Analysis Date:	3/7/2016	SeqNo:	998471	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	108	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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS-24101		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24101		RunNo: 32603					
Prep Date:	3/7/2016		Analysis Date: 3/7/2016		SeqNo: 997914		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.9	1.0	5.000	0	118	71.3	139			
Surr: DNOP	0.50		0.5000		99.7	70	141			

Sample ID	MB-24101	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range						
Client ID:	PBW	Batch ID: 24101		RunNo: 32603						
Prep Date:	3/7/2016	Analysis Date: 3/7/2016		SeqNo: 997915		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	0.91		1.000		90.8	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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A32596	RunNo:	32596					
Prep Date:		Analysis Date:	3/4/2016	SeqNo:	997207	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		95.0	49.5	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A32596	RunNo:	32596					
Prep Date:		Analysis Date:	3/4/2016	SeqNo:	997208	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	103	80	120			
Surr: BFB	21		20.00		106	49.5	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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-24175	SampType: MBLK		TestCode: EPA Method 8082: PCB's						
Client ID:	PBW	Batch ID: 24175		RunNo: 32727						
Prep Date:	3/10/2016	Analysis Date: 3/11/2016		SeqNo: 1002684		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.4		2.500		94.4	26.1	140			
Surr: Tetrachloro-m-xylene	3.9		2.500		155	15	123			S

Sample ID	LCS-24175		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 24175		RunNo: 32727					
Prep Date:	3/10/2016		Analysis Date: 3/11/2016		SeqNo: 1002685		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	62.3	15	131			
Aroclor 1260	3.3	1.0	5.000	0	66.9	15	162			
Surr: Decachlorobiphenyl	2.2		2.500		89.2	26.1	140			
Surr: Tetrachloro-m-xylene	3.0		2.500		122	15	123			

Sample ID	LCSD-24175	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	24175	RunNo:	32727					
Prep Date:	3/10/2016	Analysis Date:	3/11/2016	SeqNo:	1002686	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.4	1.0	5.000	0	68.0	15	131	8.66	24.4	
Aroclor 1260	3.7	1.0	5.000	0	74.8	15	162	11.1	28	
Surr: Decachlorobiphenyl	2.4		2.500		94.8	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	3.3		2.500		130	15	123	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B32762			RunNo: 32762						
Prep Date:	Analysis Date: 3/11/2016			SeqNo: 1002996		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.6	70	130			
Surr: Toluene-d8	9.8		10.00		97.7	70	130			

Sample ID 100ng lcs b	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: B32762			RunNo: 32762						
Prep Date:	Analysis Date: 3/11/2016			SeqNo: 1003007		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.5	70	130			
Toluene	20	1.0	20.00	0	98.8	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.8	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	85.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.9	70	130			
Surr: Toluene-d8	9.8		10.00		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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-24176		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	24176		RunNo:	32851			
Prep Date:	3/10/2016		Analysis Date:	3/17/2016		SeqNo:	1006908	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		64.4	33.4	129			

Sample ID	LCS-24176		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	24176		RunNo:	32851			
Prep Date:	3/10/2016		Analysis Date:	3/17/2016		SeqNo:	1006935	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	73	2.0	80.00	0	91.6	54.6	110			
1-Methylnaphthalene	75	2.0	80.20	0	93.6	49.1	116			
2-Methylnaphthalene	75	2.0	80.00	0	94.1	52.5	111			
Acenaphthylene	69	2.5	80.20	0	85.9	63.7	122			
Acenaphthene	77	2.0	80.00	0	96.2	50.6	114			
Fluorene	8.0	0.80	8.020	0	99.6	48.9	106			
Phenanthrene	4.0	0.60	4.020	0	100	54.7	110			
Anthracene	3.7	0.60	4.020	0	92.5	52	106			
Fluoranthene	8.7	0.30	8.020	0	109	57.8	113			
Pyrene	8.1	0.30	8.020	0	101	59.7	118			
Benz(a)anthracene	0.75	0.070	0.8020	0	93.5	56.6	109			
Chrysene	4.1	0.20	4.020	0	102	57.6	110			
Benzo(b)fluoranthene	0.96	0.10	1.002	0	95.8	54.9	106			
Benzo(k)fluoranthene	0.52	0.070	0.5000	0	104	59.3	112			

Qualifiers:

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

B Analyte detected in the 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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS-24176		SampType: LCS			TestCode: EPA Method 8310: PAHs				
Client ID:	LCSW		Batch ID: 24176			RunNo: 32851				
Prep Date:	3/10/2016		Analysis Date: 3/17/2016			SeqNo: 1006935		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107			
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	103	54.8	108			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	103	56.9	110			
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109			
Surr: Benzo(e)pyrene	17		20.00		83.0	33.4	129			

Sample ID	LCSD-24176		SampType: LCSD			TestCode: EPA Method 8310: PAHs				
Client ID:	LCSS02		Batch ID: 24176			RunNo: 32851				
Prep Date:	3/10/2016		Analysis Date: 3/17/2016			SeqNo: 1006990		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	73	2.0	80.00	0	91.3	54.6	110	0.314	20	
1-Methylnaphthalene	73	2.0	80.20	0	91.2	49.1	116	2.51	20	
2-Methylnaphthalene	73	2.0	80.00	0	90.7	52.5	111	3.64	20	
Acenaphthylene	68	2.5	80.20	0	85.4	63.7	122	0.640	20	
Acenaphthene	74	2.0	80.00	0	92.3	50.6	114	4.22	20	
Fluorene	7.2	0.80	8.020	0	89.7	48.9	106	10.5	20	
Phenanthrene	4.0	0.60	4.020	0	99.5	54.7	110	0.747	24	
Anthracene	3.7	0.60	4.020	0	92.5	52	106	0	20	
Fluoranthene	8.7	0.30	8.020	0	108	57.8	113	0.460	20.9	
Pyrene	8.1	0.30	8.020	0	101	59.7	118	0.618	20.8	
Benz(a)anthracene	0.77	0.070	0.8020	0	96.0	56.6	109	2.63	20	
Chrysene	4.1	0.20	4.020	0	102	57.6	110	0.244	20	
Benzo(b)fluoranthene	0.95	0.10	1.002	0	94.8	54.9	106	1.05	20.6	
Benzo(k)fluoranthene	0.52	0.070	0.5000	0	104	59.3	112	0	20.8	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	0	20	
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	104	54.8	108	0.966	20	
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	103	56.9	110	0	20	
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109	0	20	
Surr: Benzo(e)pyrene	17		20.00		82.8	33.4	129	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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-24124		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	24124		RunNo:	32622				
Prep Date:	3/8/2016		Analysis Date:	3/8/2016		SeqNo:	998125		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-24124		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 24124		RunNo: 32622					
Prep Date:	3/8/2016		Analysis Date: 3/8/2016		SeqNo: 998126		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	106	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R32959		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R32959		RunNo:	32959				
Prep Date:			Analysis Date:	3/16/2016		SeqNo:	1010968	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R32959			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R32959		RunNo:	32959			
Prep Date:				Analysis Date:	3/16/2016		SeqNo:	1010969	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.493		0.5000	0	98.6	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R32954		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R32954		RunNo:	32954			
Prep Date:			Analysis Date:	3/18/2016		SeqNo:	1010754	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.501	0.776								
Radium-226 ±	0.521	0.776								
Radium-228	0.0536	0.871								
Radium-228 ±	0.38	0.871								

Qualifiers:

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

B Analyte detected in the 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#: 1603242

01-Apr-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-24120		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	24120		RunNo:	32669				
Prep Date:	3/7/2016		Analysis Date:	3/9/2016		SeqNo:	999682		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-24120		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	24120		RunNo:	32669				
Prep Date:	3/7/2016		Analysis Date:	3/9/2016		SeqNo:	999683		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1030	20.0	1000	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
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: NAVAJO REFINING CO

Work Order Number: 1603242

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

Completed By: Ashley Gallegos

Reviewed By: IO

3/4/2016 10:00:00 AM

3/4/2016 10:28:24 AM

03/04/16

Ag
Ag

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: 7 or >12 (unless noted) Adjusted? NO
- Checked by: AJ

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	1.3	Good	Yes			

www.hallenvironmental.com

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



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

April 01, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1603243

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/4/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1603243**

Date Reported: **4/1/2016**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 3/3/2016 9:30:00 AM

Lab ID: 1603243-001

Matrix: AQUEOUS

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8011/504.1: EDB Analyst: JME						
1,2-Dibromoethane	ND	0.010		µg/L	1	3/7/2016 5:12:38 PM
EPA METHOD 8082: PCB'S Analyst: SCC						
Aroclor 1016	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Aroclor 1221	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Aroclor 1232	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Aroclor 1242	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Aroclor 1248	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Aroclor 1254	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Aroclor 1260	ND	1.0		µg/L	1	3/11/2016 3:10:44 PM
Surr: Decachlorobiphenyl	119	26.1-140		%Rec	1	3/11/2016 3:10:44 PM
Surr: Tetrachloro-m-xylene	126	15-123	S	%Rec	1	3/11/2016 3:10:44 PM
EPA METHOD 8015M/D: DIESEL RANGE Analyst: KJH						
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/7/2016 5:59:24 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/7/2016 5:59:24 PM
Surr: DNOP	102	70-141		%Rec	1	3/7/2016 5:59:24 PM
EPA METHOD 8015D: GASOLINE RANGE Analyst: NSB						
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/4/2016 10:11:02 PM
Surr: BFB	89.2	49.5-130		%Rec	1	3/4/2016 10:11:02 PM
EPA METHOD 8310: PAHS Analyst: SCC						
Naphthalene	ND	2.0		µg/L	1	3/17/2016 1:25:22 PM
1-Methylnaphthalene	ND	2.0		µg/L	1	3/17/2016 1:25:22 PM
2-Methylnaphthalene	ND	2.0		µg/L	1	3/17/2016 1:25:22 PM
Benzo(a)pyrene	ND	0.070		µg/L	1	3/17/2016 1:25:22 PM
Surr: Benzo(e)pyrene	75.2	33.4-129		%Rec	1	3/17/2016 1:25:22 PM
EPA METHOD 300.0: ANIONS Analyst: JRR						
Fluoride	2.6	2.0		mg/L	20	3/4/2016 3:28:16 PM
Chloride	100	10		mg/L	20	3/4/2016 3:28:16 PM
Nitrogen, Nitrate (As N)	1.5	0.10		mg/L	1	3/4/2016 3:15:51 PM
Sulfate	1100	25		mg/L	50	3/18/2016 3:17:58 AM
EPA METHOD 200.7: DISSOLVED METALS Analyst: ELS						
Aluminum	ND	0.020		mg/L	1	3/18/2016 6:33:30 PM
Barium	0.047	0.0020		mg/L	1	3/18/2016 6:33:30 PM
Boron	0.066	0.040		mg/L	1	3/18/2016 6:33:30 PM
Cadmium	ND	0.0020		mg/L	1	3/18/2016 6:33:30 PM
Chromium	ND	0.0060		mg/L	1	3/18/2016 6:33:30 PM
Cobalt	ND	0.0060		mg/L	1	3/18/2016 6:33:30 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1603243

Date Reported: 4/1/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 3/3/2016 9:30:00 AM

Lab ID: 1603243-001

Matrix: AQUEOUS

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Copper	ND	0.0060		mg/L	1	3/23/2016 5:28:16 PM
Iron	ND	0.020		mg/L	1	3/18/2016 6:33:30 PM
Manganese	ND	0.0020		mg/L	1	3/18/2016 6:33:30 PM
Molybdenum	ND	0.0080		mg/L	1	3/18/2016 6:33:30 PM
Nickel	ND	0.010		mg/L	1	3/18/2016 6:33:30 PM
Silver	ND	0.0050		mg/L	1	3/18/2016 6:33:30 PM
Zinc	0.043	0.010		mg/L	1	3/18/2016 6:33:30 PM
EPA 200.8: DISSOLVED METALS						Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	3/29/2016 5:48:50 PM
Lead	ND	0.00050		mg/L	1	3/28/2016 8:28:07 PM
Selenium	0.0065	0.0010		mg/L	1	3/28/2016 8:28:07 PM
Uranium	0.0042	0.00050		mg/L	1	3/28/2016 8:28:07 PM
EPA METHOD 245.1: MERCURY						Analyst: pmf
Mercury	ND	0.00020		mg/L	1	3/10/2016 11:34:07 AM
EPA METHOD 8260B: VOLATILES						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Toluene	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Ethylbenzene	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Chloroform	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Methylene Chloride	ND	3.0		µg/L	1	3/11/2016 8:44:01 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/11/2016 8:44:01 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Vinyl chloride	ND	1.0		µg/L	1	3/11/2016 8:44:01 PM
Xylenes, Total	ND	1.5		µg/L	1	3/11/2016 8:44:01 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	3/11/2016 8:44:01 PM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	3/11/2016 8:44:01 PM
Surr: Dibromofluoromethane	99.8	70-130		%Rec	1	3/11/2016 8:44:01 PM
Surr: Toluene-d8	94.1	70-130		%Rec	1	3/11/2016 8:44:01 PM

TOTAL PHENOLICS BY SW-846 9067

Analyst: SCC

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1603243**

Date Reported: **4/1/2016**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 3/3/2016 9:30:00 AM

Lab ID: 1603243-001

Matrix: AQUEOUS

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	3/8/2016
EPA 335.4: TOTAL CYANIDE SUBBED						Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	3/8/2016
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED						Analyst: SUB
Radium-226	0.561	0.671		pCi/L	1	3/21/2016 10:40:00 AM
Radium-226 ±	0.478	0.671		pCi/L	1	3/21/2016 10:40:00 AM
Radium-228	0.425	0.810		pCi/L	1	3/21/2016 10:40:00 AM
Radium-228 ±	0.397	0.810		pCi/L	1	3/21/2016 10:40:00 AM
SM4500-H+B: PH						Analyst: JRR
pH	8.15	1.68	H	pH units	1	3/7/2016 7:58:22 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	2490	20.0	*	mg/L	1	3/9/2016 11:47:00 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1603243

Date Reported: 4/1/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1603243-002

Matrix: TRIP BLANK

Received Date: 3/4/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/4/2016 10:35:40 PM
Surr: BFB	87.8	49.5-130		%Rec	1	3/4/2016 10:35:40 PM
EPA METHOD 8260B: VOLATILES						Analyst: DJF
Benzene	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Toluene	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Ethylbenzene	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Chloroform	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Methylene Chloride	ND	3.0		µg/L	1	3/11/2016 9:12:13 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/11/2016 9:12:13 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Vinyl chloride	ND	1.0		µg/L	1	3/11/2016 9:12:13 PM
Xylenes, Total	ND	1.5		µg/L	1	3/11/2016 9:12:13 PM
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	3/11/2016 9:12:13 PM
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	3/11/2016 9:12:13 PM
Surr: Dibromofluoromethane	94.6	70-130		%Rec	1	3/11/2016 9:12:13 PM
Surr: Toluene-d8	98.6	70-130		%Rec	1	3/11/2016 9:12:13 PM

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample 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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C32891		RunNo: 32891							
Prep Date:	Analysis Date: 3/18/2016		SeqNo: 1008301		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C32891		RunNo: 32891							
Prep Date:	Analysis Date: 3/18/2016		SeqNo: 1008302		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.50	0.0020	0.5000	0	99.1	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.8	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Manganese	0.49	0.0020	0.5000	0	97.8	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.3	85	115			

Sample ID LLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C32891		RunNo: 32891							
Prep Date:	Analysis Date: 3/18/2016		SeqNo: 1008303		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	111	50	150			
Barium	0.0021	0.0020	0.002000	0	103	50	150			
Boron	ND	0.040	0.04000	0	97.7	50	150			
Cadmium	ND	0.0020	0.002000	0	99.5	50	150			
Chromium	ND	0.0060	0.006000	0	87.8	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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C32891		RunNo: 32891					
Prep Date:			Analysis Date: 3/18/2016		SeqNo: 1008303		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060	0.006000	0	85.3	50	150			
Iron	0.021	0.020	0.02000	0	103	50	150			
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Molybdenum	0.0097	0.0080	0.008000	0	121	50	150			
Nickel	ND	0.010	0.005000	0	98.6	50	150			
Silver	ND	0.0050	0.005000	0	76.2	50	150			
Zinc	ND	0.010	0.005000	0	100	50	150			

Sample ID	LCS-C		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID:	C32891		RunNo:	32891				
Prep Date:			Analysis Date:	3/18/2016		SeqNo:	1008305	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	85	115				

Sample ID	MB-C		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: C33001		RunNo: 33001					
Prep Date:			Analysis Date: 3/23/2016		SeqNo: 1012812		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								

Sample ID	LCS-C		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: C33001		RunNo: 33001					
Prep Date:			Analysis Date: 3/23/2016		SeqNo: 1012813		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.48	0.0060	0.5000	0	95.4	85	115			

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C33001		RunNo: 33001					
Prep Date:			Analysis Date: 3/23/2016		SeqNo: 1012814		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0074	0.0060	0.006000	0	124	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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: C33120			RunNo: 33120						
Prep Date:	Analysis Date: 3/28/2016			SeqNo: 1016768		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Uranium	0.012	0.00050	0.01250	0	95.1	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: C33120			RunNo: 33120						
Prep Date:	Analysis Date: 3/28/2016			SeqNo: 1016770		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			
Uranium	ND	0.00050	0.0005000	0	96.8	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: C33120			RunNo: 33120						
Prep Date:	Analysis Date: 3/28/2016			SeqNo: 1016772		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: B33154			RunNo: 33154						
Prep Date:	Analysis Date: 3/29/2016			SeqNo: 1018089		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.7	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: B33154			RunNo: 33154						
Prep Date:	Analysis Date: 3/29/2016			SeqNo: 1018090		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	98.0	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#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	B33154	RunNo:	33154					
Prep Date:		Analysis Date:	3/29/2016	SeqNo:	1018091	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-24156	SampType:	mbk	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	24156	RunNo:	32702					
Prep Date:	3/9/2016	Analysis Date:	3/10/2016	SeqNo:	1000942	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-24156	SampType:	lcs	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	24156	RunNo:	32702					
Prep Date:	3/9/2016	Analysis Date:	3/10/2016	SeqNo:	1000945	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	109	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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R32618		RunNo: 32618							
Prep Date:	Analysis Date: 3/4/2016		SeqNo: 997926		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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R32618		RunNo: 32618							
Prep Date:	Analysis Date: 3/4/2016		SeqNo: 997927		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	101	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R32879		RunNo: 32879							
Prep Date:	Analysis Date: 3/17/2016		SeqNo: 1007965		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R32879		RunNo: 32879							
Prep Date:	Analysis Date: 3/17/2016		SeqNo: 1007966		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.5	0.50	10.00	0	94.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-24100		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	24100		RunNo:	32621				
Prep Date:	3/7/2016		Analysis Date:	3/7/2016		SeqNo:	998470		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-24100		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	24100		RunNo:	32621				
Prep Date:	3/7/2016		Analysis Date:	3/7/2016		SeqNo:	998471		Units:		µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.11	0.010	0.1000	0	108	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#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	LCS-24101		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 24101		RunNo: 32603					
Prep Date:	3/7/2016		Analysis Date: 3/7/2016		SeqNo: 997914		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.9	1.0	5.000	0	118	71.3	139			
Surr: DNOP	0.50		0.5000		99.7	70	141			

Sample ID	MB-24101	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range						
Client ID:	PBW	Batch ID: 24101		RunNo: 32603						
Prep Date:	3/7/2016	Analysis Date: 3/7/2016		SeqNo: 997915		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	0.91		1.000		90.8	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#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A32596	RunNo:	32596					
Prep Date:		Analysis Date:	3/4/2016	SeqNo:	997207	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		95.0	49.5	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A32596	RunNo:	32596					
Prep Date:		Analysis Date:	3/4/2016	SeqNo:	997208	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	103	80	120			
Surr: BFB	21		20.00		106	49.5	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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-24175	SampType:	MBLK		TestCode:	EPA Method 8082: PCB's				
Client ID:	PBW	Batch ID:	24175		RunNo:	32727				
Prep Date:	3/10/2016	Analysis Date:	3/11/2016		SeqNo:	1002684	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.4		2.500		94.4	26.1	140			
Surr: Tetrachloro-m-xylene	3.9		2.500		155	15	123			S

Sample ID	LCS-24175		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 24175		RunNo: 32727					
Prep Date:	3/10/2016		Analysis Date: 3/11/2016		SeqNo: 1002685		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	62.3	15	131			
Aroclor 1260	3.3	1.0	5.000	0	66.9	15	162			
Surr: Decachlorobiphenyl	2.2		2.500		89.2	26.1	140			
Surr: Tetrachloro-m-xylene	3.0		2.500		122	15	123			

Sample ID	LCSD-24175		SampType: LCSD		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02		Batch ID: 24175		RunNo: 32727					
Prep Date:	3/10/2016		Analysis Date: 3/11/2016		SeqNo: 1002686		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.4	1.0	5.000	0	68.0	15	131	8.66	24.4	
Aroclor 1260	3.7	1.0	5.000	0	74.8	15	162	11.1	28	
Surr: Decachlorobiphenyl	2.4		2.500		94.8	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	3.3		2.500		130	15	123	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B32762			RunNo: 32762						
Prep Date:	Analysis Date: 3/11/2016			SeqNo: 1002996		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.6	70	130			
Surr: Toluene-d8	9.8		10.00		97.7	70	130			

Sample ID 100ng lcs b	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: B32762			RunNo: 32762						
Prep Date:	Analysis Date: 3/11/2016			SeqNo: 1003007		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.5	70	130			
Toluene	20	1.0	20.00	0	98.8	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	90.8	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	85.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.9	70	130			
Surr: Toluene-d8	9.8		10.00		98.3	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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-24176	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 24176		RunNo: 32851							
Prep Date: 3/10/2016	Analysis Date: 3/17/2016		SeqNo: 1006908		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		64.4	33.4	129			

Sample ID LCS-24176	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 24176		RunNo: 32851							
Prep Date: 3/10/2016	Analysis Date: 3/17/2016		SeqNo: 1006935		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	73	2.0	80.00	0	91.6	54.6	110			
1-Methylnaphthalene	75	2.0	80.20	0	93.6	49.1	116			
2-Methylnaphthalene	75	2.0	80.00	0	94.1	52.5	111			
Acenaphthylene	69	2.5	80.20	0	85.9	63.7	122			
Acenaphthene	77	2.0	80.00	0	96.2	50.6	114			
Fluorene	8.0	0.80	8.020	0	99.6	48.9	106			
Phenanthrene	4.0	0.60	4.020	0	100	54.7	110			
Anthracene	3.7	0.60	4.020	0	92.5	52	106			
Fluoranthene	8.7	0.30	8.020	0	109	57.8	113			
Pyrene	8.1	0.30	8.020	0	101	59.7	118			
Benz(a)anthracene	0.75	0.070	0.8020	0	93.5	56.6	109			
Chrysene	4.1	0.20	4.020	0	102	57.6	110			
Benzo(b)fluoranthene	0.96	0.10	1.002	0	95.8	54.9	106			
Benzo(k)fluoranthene	0.52	0.070	0.5000	0	104	59.3	112			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1603243

01-Apr-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS-24176		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	24176		RunNo:	32851			
Prep Date:	3/10/2016		Analysis Date:	3/17/2016		SeqNo:	1006935	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107			
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	103	54.8	108			
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	103	56.9	110			
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109			
Surr: Benzo(e)pyrene	17		20.00		83.0	33.4	129			

Sample ID	LCSD-24176		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	24176		RunNo:	32851			
Prep Date:	3/10/2016		Analysis Date:	3/17/2016		SeqNo:	1006990	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	73	2.0	80.00	0	91.3	54.6	110	0.314	20	
1-Methylnaphthalene	73	2.0	80.20	0	91.2	49.1	116	2.51	20	
2-Methylnaphthalene	73	2.0	80.00	0	90.7	52.5	111	3.64	20	
Acenaphthylene	68	2.5	80.20	0	85.4	63.7	122	0.640	20	
Acenaphthene	74	2.0	80.00	0	92.3	50.6	114	4.22	20	
Fluorene	7.2	0.80	8.020	0	89.7	48.9	106	10.5	20	
Phenanthrene	4.0	0.60	4.020	0	99.5	54.7	110	0.747	24	
Anthracene	3.7	0.60	4.020	0	92.5	52	106	0	20	
Fluoranthene	8.7	0.30	8.020	0	108	57.8	113	0.460	20.9	
Pyrene	8.1	0.30	8.020	0	101	59.7	118	0.618	20.8	
Benz(a)anthracene	0.77	0.070	0.8020	0	96.0	56.6	109	2.63	20	
Chrysene	4.1	0.20	4.020	0	102	57.6	110	0.244	20	
Benzo(b)fluoranthene	0.95	0.10	1.002	0	94.8	54.9	106	1.05	20.6	
Benzo(k)fluoranthene	0.52	0.070	0.5000	0	104	59.3	112	0	20.8	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	0	20	
Dibenz(a,h)anthracene	1.0	0.12	1.002	0	104	54.8	108	0.966	20	
Benzo(g,h,i)perylene	1.0	0.12	1.000	0	103	56.9	110	0	20	
Indeno(1,2,3-cd)pyrene	2.1	0.25	2.004	0	105	55.2	109	0	20	
Surr: Benzo(e)pyrene	17		20.00		82.8	33.4	129	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#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-24124	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	24124	RunNo:	32622					
Prep Date:	3/8/2016	Analysis Date:	3/8/2016	SeqNo:	998125	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-24124	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	24124	RunNo:	32622					
Prep Date:	3/8/2016	Analysis Date:	3/8/2016	SeqNo:	998126	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	106	64.4	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R33030		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R33030		RunNo:	33030				
Prep Date:			Analysis Date:	3/8/2016		SeqNo:	1013399	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R33030		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R33030		RunNo: 33030					
Prep Date:			Analysis Date: 3/8/2016		SeqNo: 1013400		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.545		0.5000	0	109	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R32960		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R32960		RunNo:	32960			
Prep Date:			Analysis Date:	3/21/2016		SeqNo:	1010971	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0	0.643								
Radium-226 ±	0.287	0.643								
Radium-228	0.31	0.686								
Radium-228 ±	0.33	0.686								

Qualifiers:

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

B Analyte detected in the 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#: 1603243

01-Apr-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-24120		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	24120		RunNo:	32669				
Prep Date:	3/7/2016		Analysis Date:	3/9/2016		SeqNo:	999682		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-24120		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 24120		RunNo: 32669					
Prep Date:	3/7/2016		Analysis Date: 3/9/2016		SeqNo: 999683		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	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
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: NAVAJO REFINING CO

Work Order Number: 1603243

ReptNo: 1

Received by/date:

Logged By: Ashley Gallegos

Completed By: Ashley Gallegos

Reviewed By:

3/4/2016 10:00:00 AM

3/4/2016 10:29:02 AM

03/04/16

Ag
Ag

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: 5 1 3/03/16
as
(<2 or >12 unless noted)
Adjusted? NO
Checked by: as

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	1.3	Good	Yes			



April 4, 2016

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail
7014 3490 0000 6269 5833

**Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
February 2015 ACO – Civil Penalty Payment
HollyFrontier Navajo LLC
Artesia Refinery**

Dear Director:

Enclosed please find a check in the amount of \$300 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for February 2016 submitted electronically on March 15, 2016. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
HFC: Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
160404 RO Reject ACO Civil Penalty Payment

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Combs, Robert

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Friday, March 18, 2016 9:13 AM
To: Denton, Scott; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert
Subject: WQA-OCD-C0-2015-002 ACO RO Reject Water Discharge Monthly Report for February 1 - 4, 2016 Reporting Period (Final Penalty Amount)

Scott:

The New Mexico Oil Conservation Division has completed its review of the above subject report and concurs with the Permittee's calculated penalty amount of \$300.

Please contact me if you have questions. Thank you.

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

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

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 03/24/2016
Check Amount \$ 300.00
Vendor No 5126527
Payment Document 2000034595
Company Code 1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
03/22/2016	032216	OCD REJECT WATER DISCHARGE FINAL PE	300.00	0.00	300.00

Payment document	Check number	Date	Currency	Payment amount
2000034595	1000323451	03/24/2016	USD	*****300.00*

↓ PLEASE FOLD ON PERFORATION AND DETACH HERE ↓

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT.

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611 1000323451
03/24/2016

PAY EXACTLY

*****300.00*USD

VOID AFTER 180 DAYS

PAY *** THREE HUNDRED and 00 /100 USD***

TO THE
ORDER OF STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225
Bank of America N.A.

Stephen D Wise
AUTHORIZED SIGNATURE

11 1000323451 03/24/2016 1000323451 11

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, March 18, 2016 9:13 AM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise (Denise.McWatters@hollyfrontier.com); O'Brien, Robert (Bob) K. (Robert.O'Brien@HollyFrontier.com); Holder, Mike (Mike.Holder@hollyfrontier.com); Combs, Robert (Robert.Combs@hollyfrontier.com)
Subject: WQA-OCD-C0-2015-002 ACO RO Reject Water Discharge Monthly Report for February 1 - 4, 2016 Reporting Period (Final Penalty Amount)

Scott:

The New Mexico Oil Conservation Division has completed its review of the above subject report and concurs with the Permittee's calculated penalty amount of \$300.

Please contact me if you have questions. Thank you.

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

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

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Wednesday, March 16, 2016 4:17 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert; Denton, Scott; Aguilar, Susie
Subject: ACO Monthly Report for February 2016 and GW-28 Report for February 2016
Attachments: 2016-03-15 ACO Monthly Report Feb 2016 Reporting Period.pdf; 2016-03-16 GW-028 Monthly Report Feb 2016 Reporting Period.pdf

Jim & Carl,

Attached is the final monthly report for the ACO covering February concerning the RO Reject. We will be submitting reports according to the GW-28 permit from February going forward. These reports were mailed yesterday.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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March 15, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – February 1 to February 4, 2016 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD) on the 15th day of the month following each monthly reporting period. OCD issued modifications to Discharge Permit GW-028 with an effective date of February 4, 2016, and as a result, the Agreed Order has been terminated as of that date. However, to meet the requirements of the Order through February 4, 2016, Navajo hereby submits this letter and all attachments constituting Navajo's February 2016 monthly report. This monthly report covers the period of February 1 through February 4, 2016, and is the final report to satisfy requirements under the Order. Monthly reporting required by the modified Discharge Permit GW-028, Condition 4.B.7, will commence in March 2016.

Specifically, this report covers the February 1 through February 4, 2016 reporting period, and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the period of February 1 through February 4, 2016, reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from February 1 through February 4.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from February 1 through February 4.

Navajo has calculated a penalty of \$300 for the reporting period from February 1 through February 4, 2016. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit in effect during the reporting period, but was under 15,000 barrels total, on 3 days from February 1 to February 4, 2016. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on February 4, 2016. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Navajo is currently preparing a notification to submit to OCD for Discharge Permit GW-028 authorization regarding installation of a third permanent primary RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid

produced. Navajo is also evaluating options for the underground injection, and other options for discharge, of RO reject fluid.

OCD issued the final modified permit conditions on February 4, 2016. In accordance with the modified Condition 4.B.4, Navajo is maintaining daily records of the flow rate and volumes from each RO unit, as well as the discharge locations. No exceedances of the 15,000 bpd limit have occurred since the permit modifications took effect on February 4, 2016. In accordance with the modified Condition 4.B.7, Navajo will submit under separate cover a monthly report to include the daily discharge flow measurements and analytical sample results for the February reporting period by March 15, 2016.

Navajo is currently preparing an early submittal of the Renewal Application for Discharge Permit GW-028. The Renewal Application will include a permit application for construction and operation of water management ponds for evaporation of RO reject fluid and possibly additional fluid streams.

Navajo has been committed to proactively meeting the requirements of the Order during its period of effect and to working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

- Attachment 1: Daily Discharge Flow Rates
- Attachment 2: Stipulated Penalty Calculation
- Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

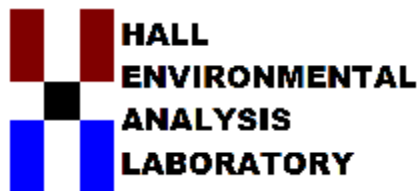
	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	SOUTH	NORTH					
2/1/2016	91	81	172	5,897	145	4957	10,854
2/2/2016	89	88	177	6,069	154	5271	11,340
2/3/2016	89	88	177	6,069	98	3365	9,434
2/4/2016	94	83	177	6,069	122	4167	10,236

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties – February 1 – February 4, 2016

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	3	\$300
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$300

Attachment 3
Analytical Lab Report



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

February 24, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly R.O. Reject

OrderNo.: 1602206

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/5/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 22, 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', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 2/4/2016 9:35:00 AM

Lab ID: 1602206-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	2/9/2016 4:03:42 PM	A32026
Lead	ND	0.00050		mg/L	1	2/8/2016 7:55:24 PM	B31999
Selenium	0.0086	0.0010		mg/L	1	2/8/2016 7:55:24 PM	B31999
Uranium	0.0049	0.00050		mg/L	1	2/8/2016 7:55:24 PM	B31999
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.537	0.826		pCi/L	1	2/16/2016	R32295
Radium-226 ±	0.546	0.826		pCi/L	1	2/16/2016	R32295
Radium-228	0.595	0.672		pCi/L	1	2/16/2016	R32295
Radium-228 ±	0.361	0.672		pCi/L	1	2/16/2016	R32295
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.2	0.10		mg/L	1	2/6/2016 12:10:43 AM	R31977
Chloride	71	10		mg/L	20	2/6/2016 12:23:08 AM	R31977
Nitrogen, Nitrate (As N)	1.3	0.10		mg/L	1	2/6/2016 12:10:43 AM	R31977
Sulfate	900	25		mg/L	50	2/18/2016 7:37:57 PM	R32274
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1940	20.0	*	mg/L	1	2/10/2016 3:47:00 PM	23638
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	2/11/2016	R32129
SM4500-H+B: PH							Analyst: MRA
pH	7.94	1.68	H	pH units	1	2/8/2016 3:55:25 PM	R32011
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Barium	0.059	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Boron	0.094	0.040		mg/L	1	2/24/2016 11:17:05 AM	B32368
Cadmium	ND	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Chromium	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Cobalt	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Copper	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Iron	ND	0.020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Manganese	ND	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Molybdenum	0.0094	0.0080		mg/L	1	2/24/2016 11:17:05 AM	B32368
Nickel	ND	0.010		mg/L	1	2/24/2016 11:17:05 AM	B32368
Silver	ND	0.0050		mg/L	1	2/24/2016 11:17:05 AM	B32368
Zinc	0.023	0.010		mg/L	1	2/24/2016 11:17:05 AM	B32368
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	2/10/2016 12:05:40 PM	23640

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 2/4/2016 9:35:00 AM

Lab ID: 1602206-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 12:55:14 PM	23604
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1221	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1232	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1242	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1248	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1254	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1260	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Surr: Decachlorobiphenyl	96.0	26.1-140		%Rec	1	2/17/2016 7:18:10 AM	23676
Surr: Tetrachloro-m-xylene	60.8	15-123		%Rec	1	2/17/2016 7:18:10 AM	23676
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	2/8/2016 1:52:07 PM	23596
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/8/2016 1:52:07 PM	23596
Surr: DNOP	105	70-141		%Rec	1	2/8/2016 1:52:07 PM	23596
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 4:52:41 PM	R31967
Surr: BFB	86.7	49.5-130		%Rec	1	2/5/2016 4:52:41 PM	R31967
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
1-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
2-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
Benzo(a)pyrene	ND	0.070		µg/L	1	2/17/2016 9:51:15 AM	23677
Surr: Benzo(e)pyrene	61.3	33.4-129		%Rec	1	2/17/2016 9:51:15 AM	23677
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 **1602206**

Date Reported: **2/24/2016**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 2/4/2016 9:35:00 AM

Lab ID: 1602206-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 5:47:24 AM	B31998
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: Dibromofluoromethane	100	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: Toluene-d8	103	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	2/18/2016	23801

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1602206-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:10:09 PM	23604
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 5:17:25 PM	R31967
Surr: BFB	82.9	49.5-130		%Rec	1	2/5/2016 5:17:25 PM	R31967
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Naphthalene	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Acetone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromodichloromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromoform	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromomethane	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Butanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Carbon disulfide	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloroethane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloromethane	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
cis-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Dibromochloromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Dibromomethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,4-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Lab Order 1602206

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Lab ID: 1602206-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2,2-Dichloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Hexachlorobutadiene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Hexanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Isopropylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Isopropyltoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Methyl-2-pentanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
n-Butylbenzene	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
n-Propylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
sec-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Styrene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
tert-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
trans-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Trichlorofluoromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 6:15:43 AM	B31998
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: Dibromofluoromethane	101	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: Toluene-d8	101	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998

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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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989628		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989629		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			
Nickel	0.47	0.010	0.5000	0	94.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989630		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	95.9	50	150			
Barium	0.0021	0.0020	0.002000	0	105	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: B32368			RunNo: 32368				
Prep Date:			Analysis Date: 2/24/2016			SeqNo: 989630		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	100	50	150			
Cadmium	ND	0.0020	0.002000	0	85.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	0.0064	0.0060	0.006000	0	107	50	150			
Iron	ND	0.020	0.02000	0	90.8	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.010	0.0080	0.008000	0	130	50	150			
Nickel	ND	0.010	0.005000	0	101	50	150			
Silver	ND	0.0050	0.005000	0	95.0	50	150			
Zinc	ND	0.010	0.005000	0	90.2	50	150			

Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B31999		RunNo: 31999					
Prep Date:			Analysis Date: 2/8/2016		SeqNo: 978440		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B31999		RunNo: 31999					
Prep Date:			Analysis Date: 2/8/2016		SeqNo: 978441		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.7	50	150			
Selenium	ND	0.0010	0.001000	0	88.9	50	150			
Uranium	ND	0.00050	0.0005000	0	98.6	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B31999			RunNo: 31999					
Prep Date:		Analysis Date: 2/8/2016			SeqNo: 978442		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A32026		RunNo: 32026					
Prep Date:			Analysis Date: 2/9/2016		SeqNo: 979375		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	101	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A32026		RunNo: 32026					
Prep Date:			Analysis Date: 2/9/2016		SeqNo: 979377		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	100	50	150			

Qualifiers:

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D Sample Diluted Due to Matrix
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ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	A32026	RunNo:	32026					
Prep Date:		Analysis Date:	2/9/2016	SeqNo:	979379	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23640		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	23640		RunNo:	32041				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979810		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-23640		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 23640		RunNo: 32041					
Prep Date:	2/9/2016		Analysis Date: 2/10/2016		SeqNo: 979811		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R31977			RunNo: 31977					
Prep Date:		Analysis Date: 2/5/2016			SeqNo: 977910		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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R31977			RunNo: 31977					
Prep Date:		Analysis Date: 2/5/2016			SeqNo: 977911		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	90	110			
Chloride	4.9	0.50	5.000	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R32274			RunNo: 32274					
Prep Date:		Analysis Date: 2/18/2016			SeqNo: 986553		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R32274		RunNo: 32274					
Prep Date:			Analysis Date: 2/18/2016		SeqNo: 986554		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	99.6	90	110			

Qualifiers:

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S % Recovery outside of range due to dilution or matrix

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E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
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QC SUMMARY REPORT

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WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23604		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978001		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-23604		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978002		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130				

Sample ID	LCSD-23604		SampType:	LCSD		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSS02		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978003		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.12	0.010	0.1000	0	123	70	130	4.17	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23596	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range						
Client ID:	PBW	Batch ID: 23596		RunNo: 31978						
Prep Date:	2/5/2016	Analysis Date: 2/8/2016		SeqNo: 977994		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		100	70	141			

Sample ID	LCS-23596		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	23596		RunNo:	31978				
Prep Date:	2/5/2016		Analysis Date:	2/8/2016		SeqNo:	977995		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154				
Surr: DNOP	0.49		0.5000		97.8	70	141				

Sample ID	1602206-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/8/2016		Analysis Date: 2/8/2016		SeqNo: 978052		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.4	1.0	5.000	0	109	41.3	177			
Surr: DNOP	0.52		0.5000		104	70	141			

Sample ID	1602206-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	R.O. Reject		Batch ID:	23596		RunNo:	31978				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978077		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	-94.6	317	3.46	22.1		
Surr: DNOP	0.50		0.5000		99.3	70	141	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977541	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	90.6	80	120			
Surr: BFB	20		20.00		97.9	49.5	130			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977542	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	17		20.00		83.7	49.5	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23676		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984090		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	3.3		2.500		132	26.1	140			
Surr: Tetrachloro-m-xylene	2.6		2.500		104	15	123			

Sample ID	LCS-23676		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984091		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	57.3	15	131			
Aroclor 1260	4.7	1.0	5.000	0	94.0	15	162			
Surr: Decachlorobiphenyl	2.3		2.500		92.0	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.2	15	123			

Sample ID	LCSD-23676	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	23676	RunNo:	32193					
Prep Date:	2/11/2016	Analysis Date:	2/17/2016	SeqNo:	984092	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	56.4	15	131	1.55	24.4	
Aroclor 1260	4.5	1.0	5.000	0	90.4	15	162	3.99	28	
Surr: Decachlorobiphenyl	2.2		2.500		87.2	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	rb2	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B31998	RunNo:	31998					
Prep Date:		Analysis Date:	2/9/2016	SeqNo:	978345	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID rb2	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES					
Client ID: PBW	Batch ID: B31998				RunNo: 31998					
Prep Date:	Analysis Date: 2/9/2016				SeqNo: 978345	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	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID 100ng lcs2	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES					
Client ID: LCSW	Batch ID: B31998				RunNo: 31998					
Prep Date:	Analysis Date: 2/8/2016				SeqNo: 978346	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	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B31998			RunNo: 31998					
Prep Date:		Analysis Date: 2/8/2016			SeqNo: 978346		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	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984104	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	9.8		20.00		48.8	33.4	129			

Sample ID	LCS-23677		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984239	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	78	2.0	80.00	0	97.6	54.6	110			
1-Methylnaphthalene	79	2.0	80.20	0	98.2	49.1	116			
2-Methylnaphthalene	79	2.0	80.00	0	98.8	52.5	111			
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107			
Surr: Benzo(e)pyrene	10		20.00		50.0	33.4	129			

Sample ID	LCSD-23677		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984240	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	54.6	110	3.55	20	
1-Methylnaphthalene	82	2.0	80.20	0	102	49.1	116	3.43	20	
2-Methylnaphthalene	82	2.0	80.00	0	102	52.5	111	3.47	20	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	3.85	20	
Surr: Benzo(e)pyrene	10		20.00		51.4	33.4	129	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23801		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 23801		RunNo: 32220					
Prep Date:	2/18/2016		Analysis Date: 2/18/2016		SeqNo: 984921		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-23801		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	23801		RunNo:	32220				
Prep Date:	2/18/2016		Analysis Date:	2/18/2016		SeqNo:	984922		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	23	2.5	20.00	0	113	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R32129		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R32129		RunNo:	32129				
Prep Date:			Analysis Date:	2/11/2016		SeqNo:	982291		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R32129		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R32129		RunNo: 32129					
Prep Date:			Analysis Date: 2/11/2016		SeqNo: 982292		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.485		0.5000	0	97.0	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R32295		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R32295		RunNo:	32295			
Prep Date:			Analysis Date:	2/16/2016		SeqNo:	987217	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-0.078	0.841								
Radium-226 ±	0.357	0.841								
Radium-228	0.165	0.797								
Radium-228 ±	0.36	0.797								

Qualifiers:

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

B Analyte detected in the 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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23638		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	23638		RunNo:	32048				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979976		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-23638		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 23638		RunNo: 32048					
Prep Date:	2/9/2016		Analysis Date: 2/10/2016		SeqNo: 979977		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	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
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1602206

RcptNo: 1

Received by/date: JA 02/05/16

Logged By: Ashley Gallegos 2/5/2016 10:05:00 AM

Completed By: Ashley Gallegos 2/5/2016 11:05:04 AM

Reviewed By: [Signature] 02/05/16

[Signature]
[Signature]

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(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: 6
(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	1.0	Good	Not Present			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



The HollyFrontier Companies

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Parts / Sample Intervals	One
--------------------------	-----

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsbery
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	2/4/2016 @ 9:30 a.m.
End Date and Time	2/4/2016 @ 9:45 a.m.

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Containers	Size	Material	Containers	or Containers	Preservatives					Analysis and/or Method Requested			
					NaOH	H2SO4	HNO3	HCL	None	pH, Cl, F, SO4, NO2/NO3, TDS	6020 total metals, 7470 Hg	6020 Dissolved Metals	
1	500ml	Plastic	2			X			X	8015 GRO			
2	40ml	VOA	3				X						
3	500ml	Plastic	1				X						
4	125ml	Plastic	1				X						
5	500ml	Plastic	2										
6	1L	Plastic	3				X						
7	40ml	VOA	2										
8	1L	Glass	1				X						
9	1L	Glass	2										
10	40ml	VOA	2										
11	40ml	VOA	2					X					

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Field Data (Weather, Observations, Etc.)	2/4/2016 Temp. 32.0 °F, Humidity 51%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time	
Field Temp. 19.7C	Field pH 7.34



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

February 24, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1602208

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/5/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 22, 2016.

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 2/4/2016 9:20:00 AM

Lab ID: 1602208-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	2/9/2016 7:05:53 PM	C32026
Lead	ND	0.00050		mg/L	1	2/8/2016 8:10:53 PM	B31999
Selenium	0.0055	0.0010		mg/L	1	2/8/2016 8:10:53 PM	B31999
Uranium	0.0031	0.00050		mg/L	1	2/8/2016 8:10:53 PM	B31999
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.755	0.989		pCi/L	1	2/16/2016	R32295
Radium-226 ±	0.667	0.989		pCi/L	1	2/16/2016	R32295
Radium-228	0.583	0.726		pCi/L	1	2/16/2016	R32295
Radium-228 ±	0.38	0.726		pCi/L	1	2/16/2016	R32295
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.3	0.10		mg/L	1	2/16/2016 9:14:11 PM	R32210
Chloride	62	10		mg/L	20	2/16/2016 9:26:36 PM	R32210
Sulfate	1000	25		mg/L	50	2/16/2016 11:12:24 AM	R32200
Nitrate+Nitrite as N	ND	1.0		mg/L	5	2/16/2016 8:49:22 PM	R32210
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2040	20.0	*	mg/L	1	2/10/2016 3:47:00 PM	23638
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	2/11/2016	R32129
SM4500-H+B: PH							Analyst: MRA
pH	8.05	1.68	H	pH units	1	2/8/2016 3:59:56 PM	R32011
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Barium	0.039	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Boron	0.064	0.040		mg/L	1	2/24/2016 11:26:24 AM	B32368
Cadmium	ND	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Chromium	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Cobalt	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Copper	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Iron	ND	0.020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Manganese	ND	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Molybdenum	ND	0.0080		mg/L	1	2/24/2016 11:26:24 AM	B32368
Nickel	ND	0.010		mg/L	1	2/24/2016 11:26:24 AM	B32368
Silver	ND	0.0050		mg/L	1	2/24/2016 11:26:24 AM	B32368
Zinc	0.036	0.010		mg/L	1	2/24/2016 11:26:24 AM	B32368
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	2/10/2016 12:07:57 PM	23640

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 2/4/2016 9:20:00 AM

Lab ID: 1602208-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:25:12 PM	23604
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1221	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1232	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1242	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1248	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1254	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1260	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Surr: Decachlorobiphenyl	54.8	26.1-140		%Rec	1	2/17/2016 7:54:09 AM	23676
Surr: Tetrachloro-m-xylene	33.2	15-123		%Rec	1	2/17/2016 7:54:09 AM	23676
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	2/8/2016 2:56:32 PM	23596
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/8/2016 2:56:32 PM	23596
Surr: DNOP	104	70-141		%Rec	1	2/8/2016 2:56:32 PM	23596
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 5:42:13 PM	R31967
Surr: BFB	85.4	49.5-130		%Rec	1	2/5/2016 5:42:13 PM	R31967
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
1-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
2-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
Benzo(a)pyrene	ND	0.070		µg/L	1	2/17/2016 10:20:33 AM	23677
Surr: Benzo(e)pyrene	51.0	33.4-129		%Rec	1	2/17/2016 10:20:33 AM	23677
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 2/4/2016 9:20:00 AM

Lab ID: 1602208-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 6:44:04 AM	B31998
Surr: 1,2-Dichloroethane-d4	90.4	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: Dibromofluoromethane	97.5	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: Toluene-d8	102	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	2/18/2016	23801

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1602208-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:40:14 PM	23604
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 6:06:58 PM	R31967
Surr: BFB	88.4	49.5-130		%Rec	1	2/5/2016 6:06:58 PM	R31967
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Naphthalene	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Acetone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromodichloromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromoform	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromomethane	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Butanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Carbon disulfide	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloroethane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloromethane	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
cis-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Dibromochloromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Dibromomethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,4-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1602208-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2,2-Dichloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Hexachlorobutadiene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Hexanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Isopropylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Isopropyltoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Methyl-2-pentanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
n-Butylbenzene	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
n-Propylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
sec-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Styrene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
tert-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
trans-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Trichlorofluoromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 7:12:24 AM	B31998
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: Dibromofluoromethane	99.5	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: Toluene-d8	101	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989628		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989629		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			
Nickel	0.47	0.010	0.5000	0	94.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989630		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	95.9	50	150			
Barium	0.0021	0.0020	0.002000	0	105	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: B32368			RunNo: 32368				
Prep Date:			Analysis Date: 2/24/2016			SeqNo: 989630		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	100	50	150			
Cadmium	ND	0.0020	0.002000	0	85.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	0.0064	0.0060	0.006000	0	107	50	150			
Iron	ND	0.020	0.02000	0	90.8	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.010	0.0080	0.008000	0	130	50	150			
Nickel	ND	0.010	0.005000	0	101	50	150			
Silver	ND	0.0050	0.005000	0	95.0	50	150			
Zinc	ND	0.010	0.005000	0	90.2	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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: B31999			RunNo: 31999						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978440		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: B31999			RunNo: 31999						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978441		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.7	50	150			
Selenium	ND	0.0010	0.001000	0	88.9	50	150			
Uranium	ND	0.00050	0.0005000	0	98.6	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: B31999			RunNo: 31999						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978442		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: C32026			RunNo: 32026						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 979376		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	98.5	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: C32026			RunNo: 32026						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 979378		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	90.1	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	C32026	RunNo:	32026					
Prep Date:		Analysis Date:	2/9/2016	SeqNo:	979380	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23640	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	23640	RunNo:	32041					
Prep Date:	2/9/2016	Analysis Date:	2/10/2016	SeqNo:	979810	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-23640	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	23640	RunNo:	32041					
Prep Date:	2/9/2016	Analysis Date:	2/10/2016	SeqNo:	979811	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

B Analyte detected in the 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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R32200		RunNo: 32200							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984262		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R32200		RunNo: 32200							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984263		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R32210		RunNo: 32210							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984551		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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R32210		RunNo: 32210							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984552		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	99.4	90	110			
Chloride	5.0	0.50	5.000	0	99.0	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23604		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978001		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-23604		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978002		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130				

Sample ID	LCSD-23604		SampType:	LCSD		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSS02		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978003		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.12	0.010	0.1000	0	123	70	130	4.17	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23596		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/5/2016		Analysis Date: 2/8/2016		SeqNo: 977994		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		100	70	141			

Sample ID	LCS-23596		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/5/2016		Analysis Date: 2/8/2016		SeqNo: 977995		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.49		0.5000		97.8	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977541	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	90.6	80	120			
Surr: BFB	20		20.00		97.9	49.5	130			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977542	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	17		20.00		83.7	49.5	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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23676		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984090		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	3.3		2.500		132	26.1	140			
Surr: Tetrachloro-m-xylene	2.6		2.500		104	15	123			

Sample ID	LCS-23676		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984091		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	57.3	15	131			
Aroclor 1260	4.7	1.0	5.000	0	94.0	15	162			
Surr: Decachlorobiphenyl	2.3		2.500		92.0	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.2	15	123			

Sample ID	LCSD-23676	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	23676	RunNo:	32193					
Prep Date:	2/11/2016	Analysis Date:	2/17/2016	SeqNo:	984092	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	56.4	15	131	1.55	24.4	
Aroclor 1260	4.5	1.0	5.000	0	90.4	15	162	3.99	28	
Surr: Decachlorobiphenyl	2.2		2.500		87.2	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B31998			RunNo: 31998						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 978345		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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B31998			RunNo: 31998						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 978345		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	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID 100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: B31998			RunNo: 31998						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978346		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	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B31998			RunNo: 31998					
Prep Date:		Analysis Date: 2/8/2016			SeqNo: 978346		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	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984104	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	9.8		20.00		48.8	33.4	129			

Sample ID	LCS-23677		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984239	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	78	2.0	80.00	0	97.6	54.6	110			
1-Methylnaphthalene	79	2.0	80.20	0	98.2	49.1	116			
2-Methylnaphthalene	79	2.0	80.00	0	98.8	52.5	111			
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107			
Surr: Benzo(e)pyrene	10		20.00		50.0	33.4	129			

Sample ID	LCSD-23677		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984240	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	54.6	110	3.55	20	
1-Methylnaphthalene	82	2.0	80.20	0	102	49.1	116	3.43	20	
2-Methylnaphthalene	82	2.0	80.00	0	102	52.5	111	3.47	20	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	3.85	20	
Surr: Benzo(e)pyrene	10		20.00		51.4	33.4	129	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23801	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	23801	RunNo:	32220					
Prep Date:	2/18/2016	Analysis Date:	2/18/2016	SeqNo:	984921	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-23801	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	23801	RunNo:	32220					
Prep Date:	2/18/2016	Analysis Date:	2/18/2016	SeqNo:	984922	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R32129		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R32129		RunNo:	32129				
Prep Date:			Analysis Date:	2/11/2016		SeqNo:	982291		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R32129		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R32129		RunNo: 32129					
Prep Date:			Analysis Date: 2/11/2016		SeqNo: 982292		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.485		0.5000	0	97.0	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R32295		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R32295		RunNo:	32295			
Prep Date:			Analysis Date:	2/16/2016		SeqNo:	987217	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-0.078	0.841								
Radium-226 ±	0.357	0.841								
Radium-228	0.165	0.797								
Radium-228 ±	0.36	0.797								

Qualifiers:

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

B Analyte detected in the 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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23638		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	23638		RunNo:	32048				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979976		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-23638		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	23638		RunNo:	32048				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979977		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1030	20.0	1000	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
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1602208**

RcptNo: **1**

Received by/date:

JA

02/05/16

Logged By:

Ashley Gallegos

2/5/2016 10:05:00 AM

AG

Completed By:

Ashley Gallegos

2/5/2016 11:17:10 AM

AG

Reviewed By:

JA

02/05/16

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° 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: *6*
(*<2 or >12 unless noted*)
Adjusted? *No*
Checked by: *JA*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly Temporary RO Reject Sample Details



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	2/4/2016 @ 9:15 a.m.
End Date and Time	2/4/2016 @ 9:30 a.m.

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Pans / Sample Intervals	One
-------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Container	Size	Material	No. of Containers	Preservatives							Analysis and/or Method Requested
				Net (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O8	NaHSO4	
1	500ml	Plastic	2	X			X				pH, Cl, F, S04, NO2/NO3, TDS
2	40ml	VOA	3		X						8015 GRO
3	500ml	Plastic	1			X					6020 total metals, 7470 Hg
4	125ml	Plastic	1			X					6020 Dissolved Metals
5	500ml	Plastic	2					X			Cyanide
6	1L	Plastic	3			X					Radium 226/228
7	40ml	VOA	2		X						8260 see attached list
8	1L	Glass	1	X							8270 see attached list
9	1L	Glass	2	X							8082 PCBs
10	40ml	VOA	2	X							8015 DRO
11	40ml	VOA	2		X						Radium 226/228

Field Data (Weather, Observations, Etc.)	2/4/2016 Tmp. 30.2 °F, Humidity 51%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time	
Field Temp. 18.5C	Field pH 7.66

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



March 15, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

**RE: Discharge Permit GW-028
Monthly Report – February 2016 Reporting Period**

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's February 2016 monthly report, for the period of February 1-29, 2016, under the Permit.

Specifically, this report covers the February 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

- Daily discharge flow measurements for each reverse osmosis (RO) unit collected as required by Condition 4.B.4.
- Results of a discharge sample collected on February 4, 2016.

Flow rates, volumes, and discharge locations for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge rates and volumes are provided in Attachment 1.

To satisfy the requirements of Agreed Compliance Order No. WQA-OCD-CO-2015-002, Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on February 5, 2016. The samples were analyzed for the constituents listed in sections 20.6.2.3103A, B, and C of the New Mexico Administrative Code (NMAC) and using the methods specified in Navajo's Facility Wide Groundwater Monitoring Program (FWGWMP). For completeness, the analytical lab report for these samples is provided in

Attachment 2 of this report as well as in the final monthly report under the Agreed Order. The sample to satisfy the quarterly sampling requirement of Condition 4.B.1 of the Permit was collected on March 3, 2016, and the corresponding analytical results will be provided in the report to be submitted in April 2015.

Navajo is committed to proactively meeting the requirements of the Permit and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Analytical Lab Report

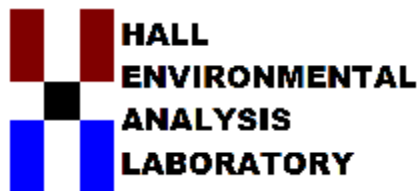
cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates and Volumes

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	SOUTH	NORTH					
2/1/2016	91	81	172	5,897	145	4957	10,854
2/2/2016	89	88	177	6,069	154	5271	11,340
2/3/2016	89	88	177	6,069	98	3365	9,434
2/4/2016	94	83	177	6,069	122	4167	10,236
2/5/2016	91	80	171	5,863	133	4546	10,409
2/6/2016	90	88	178	6,103	147	5057	11,160
2/7/2016	97	87	184	6,309	146	4997	11,306
2/8/2016	93	90	183	6,274	151	5163	11,437
2/9/2016	90	85	175	6,000	153	5247	11,247
2/10/2016	94	80	174	5,966	154	5268	11,234
2/11/2016	92	89	181	6,206	156	5350	11,556
2/12/2016	91	85	176	6,034	157	5397	11,431
2/13/2016	91	84	175	6,000	150	5144	11,144
2/14/2016	95	97	192	6,583	148	5086	11,669
2/15/2016	95	82	177	6,069	146	5008	11,077
2/16/2016	88	80	168	5,760	91	3104	8,864
2/17/2016	92	84	176	6,034	146	5018	11,052
2/18/2016	93	89	182	6,240	137	4696	10,936
2/19/2016	90	82	172	5,897	120	4111	10,008
2/20/2016	92	74	166	5,691	126	4331	10,022
2/21/2016	94	91	185	6,343	126	4312	10,655
2/22/2016	91	85	176	6,034	79	2711	8,745
2/23/2016	88	81	169	5,794	103	3529	9,323
2/24/2016	94	78	172	5,897	123	4234	10,131
2/25/2016	93	78	171	5,863	123	4231	10,094
2/26/2016	97	112	209	7,166	122	4198	11,364
2/27/2016	95	117	212	7,269	124	4259	11,528
2/28/2016	93	113	206	7,063	115	3949	11,012
2/29/2016	86	113	199	6,823	63	2176	8,999

Attachment 2
Analytical Lab Report



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

February 24, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly R.O. Reject

OrderNo.: 1602206

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/5/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 22, 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', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 2/4/2016 9:35:00 AM

Lab ID: 1602206-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	2/9/2016 4:03:42 PM	A32026
Lead	ND	0.00050		mg/L	1	2/8/2016 7:55:24 PM	B31999
Selenium	0.0086	0.0010		mg/L	1	2/8/2016 7:55:24 PM	B31999
Uranium	0.0049	0.00050		mg/L	1	2/8/2016 7:55:24 PM	B31999
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.537	0.826		pCi/L	1	2/16/2016	R32295
Radium-226 ±	0.546	0.826		pCi/L	1	2/16/2016	R32295
Radium-228	0.595	0.672		pCi/L	1	2/16/2016	R32295
Radium-228 ±	0.361	0.672		pCi/L	1	2/16/2016	R32295
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.2	0.10		mg/L	1	2/6/2016 12:10:43 AM	R31977
Chloride	71	10		mg/L	20	2/6/2016 12:23:08 AM	R31977
Nitrogen, Nitrate (As N)	1.3	0.10		mg/L	1	2/6/2016 12:10:43 AM	R31977
Sulfate	900	25		mg/L	50	2/18/2016 7:37:57 PM	R32274
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1940	20.0	*	mg/L	1	2/10/2016 3:47:00 PM	23638
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	2/11/2016	R32129
SM4500-H+B: PH							Analyst: MRA
pH	7.94	1.68	H	pH units	1	2/8/2016 3:55:25 PM	R32011
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Barium	0.059	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Boron	0.094	0.040		mg/L	1	2/24/2016 11:17:05 AM	B32368
Cadmium	ND	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Chromium	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Cobalt	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Copper	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Iron	ND	0.020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Manganese	ND	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Molybdenum	0.0094	0.0080		mg/L	1	2/24/2016 11:17:05 AM	B32368
Nickel	ND	0.010		mg/L	1	2/24/2016 11:17:05 AM	B32368
Silver	ND	0.0050		mg/L	1	2/24/2016 11:17:05 AM	B32368
Zinc	0.023	0.010		mg/L	1	2/24/2016 11:17:05 AM	B32368
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	2/10/2016 12:05:40 PM	23640

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 2/4/2016 9:35:00 AM

Lab ID: 1602206-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 12:55:14 PM	23604
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1221	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1232	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1242	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1248	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1254	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1260	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Surr: Decachlorobiphenyl	96.0	26.1-140		%Rec	1	2/17/2016 7:18:10 AM	23676
Surr: Tetrachloro-m-xylene	60.8	15-123		%Rec	1	2/17/2016 7:18:10 AM	23676
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	2/8/2016 1:52:07 PM	23596
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/8/2016 1:52:07 PM	23596
Surr: DNOP	105	70-141		%Rec	1	2/8/2016 1:52:07 PM	23596
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 4:52:41 PM	R31967
Surr: BFB	86.7	49.5-130		%Rec	1	2/5/2016 4:52:41 PM	R31967
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
1-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
2-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
Benzo(a)pyrene	ND	0.070		µg/L	1	2/17/2016 9:51:15 AM	23677
Surr: Benzo(e)pyrene	61.3	33.4-129		%Rec	1	2/17/2016 9:51:15 AM	23677
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998

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

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 2/4/2016 9:35:00 AM

Lab ID: 1602206-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 5:47:24 AM	B31998
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: Dibromofluoromethane	100	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: Toluene-d8	103	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	2/18/2016	23801

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1602206-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:10:09 PM	23604
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 5:17:25 PM	R31967
Surr: BFB	82.9	49.5-130		%Rec	1	2/5/2016 5:17:25 PM	R31967
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Naphthalene	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Acetone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromodichloromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromoform	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromomethane	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Butanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Carbon disulfide	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloroethane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloromethane	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
cis-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Dibromochloromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Dibromomethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,4-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602206

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1602206-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2,2-Dichloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Hexachlorobutadiene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Hexanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Isopropylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Isopropyltoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Methyl-2-pentanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
n-Butylbenzene	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
n-Propylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
sec-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Styrene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
tert-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
trans-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Trichlorofluoromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 6:15:43 AM	B31998
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: Dibromofluoromethane	101	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: Toluene-d8	101	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989628		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989629		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			
Nickel	0.47	0.010	0.5000	0	94.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989630		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	95.9	50	150			
Barium	0.0021	0.0020	0.002000	0	105	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLLCS-B	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B32368			RunNo: 32368					
Prep Date:	Analysis Date: 2/24/2016			SeqNo: 989630		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	100	50	150			
Cadmium	ND	0.0020	0.002000	0	85.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	0.0064	0.0060	0.006000	0	107	50	150			
Iron	ND	0.020	0.02000	0	90.8	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.010	0.0080	0.008000	0	130	50	150			
Nickel	ND	0.010	0.005000	0	101	50	150			
Silver	ND	0.0050	0.005000	0	95.0	50	150			
Zinc	ND	0.010	0.005000	0	90.2	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B31999		RunNo: 31999					
Prep Date:			Analysis Date: 2/8/2016		SeqNo: 978440		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B31999			RunNo: 31999					
Prep Date:		Analysis Date: 2/8/2016			SeqNo: 978441		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.7	50	150			
Selenium	ND	0.0010	0.001000	0	88.9	50	150			
Uranium	ND	0.00050	0.0005000	0	98.6	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B31999			RunNo: 31999					
Prep Date:		Analysis Date: 2/8/2016			SeqNo: 978442		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A32026		RunNo: 32026					
Prep Date:			Analysis Date: 2/9/2016		SeqNo: 979375		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	101	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A32026		RunNo: 32026					
Prep Date:			Analysis Date: 2/9/2016		SeqNo: 979377		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	100	50	150			

Qualifiers:

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

B Analyte detected in the 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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	A32026	RunNo:	32026					
Prep Date:		Analysis Date:	2/9/2016	SeqNo:	979379	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23640		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	23640		RunNo:	32041				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979810		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-23640		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 23640		RunNo: 32041					
Prep Date:	2/9/2016		Analysis Date: 2/10/2016		SeqNo: 979811		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

B Analyte detected in the 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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R31977	RunNo:	31977					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977910	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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R31977	RunNo:	31977					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977911	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	90	110			
Chloride	4.9	0.50	5.000	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R32274	RunNo:	32274					
Prep Date:		Analysis Date:	2/18/2016	SeqNo:	986553	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R32274	RunNo:	32274					
Prep Date:		Analysis Date:	2/18/2016	SeqNo:	986554	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	99.6	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

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23604		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978001		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-23604		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 23604		RunNo: 31988					
Prep Date:	2/8/2016		Analysis Date: 2/8/2016		SeqNo: 978002		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130			

Sample ID	LCSD-23604		SampType: LCSD		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSS02		Batch ID: 23604		RunNo: 31988					
Prep Date:	2/8/2016		Analysis Date: 2/8/2016		SeqNo: 978003		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	123	70	130	4.17	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23596		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/5/2016		Analysis Date: 2/8/2016		SeqNo: 977994		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		100	70	141			

Sample ID	LCS-23596		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/5/2016		Analysis Date: 2/8/2016		SeqNo: 977995		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.49		0.5000		97.8	70	141			

Sample ID	1602206-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/8/2016		Analysis Date: 2/8/2016		SeqNo: 978052		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.4	1.0	5.000	0	109	41.3	177			
Surr: DNOP	0.52		0.5000		104	70	141			

Sample ID	1602206-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	R.O. Reject		Batch ID:	23596		RunNo:	31978				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978077		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	-94.6	317	3.46	22.1		
Surr: DNOP	0.50		0.5000		99.3	70	141	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977541	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	90.6	80	120			
Surr: BFB	20		20.00		97.9	49.5	130			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977542	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	17		20.00		83.7	49.5	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23676		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984090		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	3.3		2.500		132	26.1	140			
Surr: Tetrachloro-m-xylene	2.6		2.500		104	15	123			

Sample ID	LCS-23676		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984091		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	57.3	15	131			
Aroclor 1260	4.7	1.0	5.000	0	94.0	15	162			
Surr: Decachlorobiphenyl	2.3		2.500		92.0	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.2	15	123			

Sample ID	LCSD-23676	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	23676	RunNo:	32193					
Prep Date:	2/11/2016	Analysis Date:	2/17/2016	SeqNo:	984092	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	56.4	15	131	1.55	24.4	
Aroclor 1260	4.5	1.0	5.000	0	90.4	15	162	3.99	28	
Surr: Decachlorobiphenyl	2.2		2.500		87.2	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	rb2	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	B31998	RunNo:	31998					
Prep Date:		Analysis Date:	2/9/2016	SeqNo:	978345	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID rb2	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES					
Client ID: PBW	Batch ID: B31998				RunNo: 31998					
Prep Date:	Analysis Date: 2/9/2016				SeqNo: 978345	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	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID 100ng lcs2	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES					
Client ID: LCSW	Batch ID: B31998				RunNo: 31998					
Prep Date:	Analysis Date: 2/8/2016				SeqNo: 978346	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	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B31998			RunNo: 31998					
Prep Date:		Analysis Date: 2/8/2016			SeqNo: 978346		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	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984104		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	9.8		20.00		48.8	33.4	129			

Sample ID	LCS-23677		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984239		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	78	2.0	80.00	0	97.6	54.6	110			
1-Methylnaphthalene	79	2.0	80.20	0	98.2	49.1	116			
2-Methylnaphthalene	79	2.0	80.00	0	98.8	52.5	111			
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107			
Surr: Benzo(e)pyrene	10		20.00		50.0	33.4	129			

Sample ID	LCSD-23677		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984240		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	54.6	110	3.55	20	
1-Methylnaphthalene	82	2.0	80.20	0	102	49.1	116	3.43	20	
2-Methylnaphthalene	82	2.0	80.00	0	102	52.5	111	3.47	20	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	3.85	20	
Surr: Benzo(e)pyrene	10		20.00		51.4	33.4	129	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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23801		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 23801		RunNo: 32220					
Prep Date:	2/18/2016		Analysis Date: 2/18/2016		SeqNo: 984921		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-23801		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	23801		RunNo:	32220				
Prep Date:	2/18/2016		Analysis Date:	2/18/2016		SeqNo:	984922		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	23	2.5	20.00	0	113	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R32129		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R32129		RunNo:	32129				
Prep Date:			Analysis Date:	2/11/2016		SeqNo:	982291		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R32129			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R32129		RunNo:	32129			
Prep Date:				Analysis Date:	2/11/2016		SeqNo:	982292	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.485		0.5000	0	97.0	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R32295		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R32295		RunNo:	32295			
Prep Date:			Analysis Date:	2/16/2016		SeqNo:	987217		Units:	pCi/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-0.078	0.841								
Radium-226 ±	0.357	0.841								
Radium-228	0.165	0.797								
Radium-228 ±	0.36	0.797								

Qualifiers:

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

B Analyte detected in the 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#: 1602206

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-23638		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	23638		RunNo:	32048				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979976		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-23638		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 23638		RunNo: 32048					
Prep Date:	2/9/2016		Analysis Date: 2/10/2016		SeqNo: 979977		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	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
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1602206

RcptNo: 1

Received by/date: JA 02/05/16

Logged By: Ashley Gallegos 2/5/2016 10:05:00 AM

Completed By: Ashley Gallegos 2/5/2016 11:05:04 AM

Reviewed By: [Signature] 02/05/16

[Signature]

[Signature]

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(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: 6
(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	1.0	Good	Not Present			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsbery
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	2/4/2016 @ 9:30 a.m.
End Date and Time	2/4/2016 @ 9:45 a.m.

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Parts / Sample Intervals	One
--------------------------	-----

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Containers	Size	Material	Containers	or Containers	Preservatives						Analysis and/or Method Requested
					NaOH	H2SO4	HNO3	HCL	None	Neat	
1	500ml	Plastic	2			X			X		pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3				X				8015 GRO
3	500ml	Plastic	1				X				6020 total metals, 7470 Hg
4	125ml	Plastic	1				X				6020 Dissolved Metals
5	500ml	Plastic	2								Cyanide
6	1L	Plastic	3				X				Radium 226/228
7	40ml	VOA	2								8260 see attached list
8	1L	Glass	1				X				8270 see attached list
9	1L	Glass	2						X		8082 PCBs
10	40ml	VOA	2						X		8015 DRO
11	40ml	VOA	2					X			Radium 226/228

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Field Data (Weather, Observations, Etc.)	2/4/2016 Temp. 32.0 °F, Humidity 51%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time	
Field Temp. 19.7C	Field pH 7.34



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

February 24, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1602208

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/5/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 22, 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', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 2/4/2016 9:20:00 AM

Lab ID: 1602208-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	2/9/2016 7:05:53 PM	C32026
Lead	ND	0.00050		mg/L	1	2/8/2016 8:10:53 PM	B31999
Selenium	0.0055	0.0010		mg/L	1	2/8/2016 8:10:53 PM	B31999
Uranium	0.0031	0.00050		mg/L	1	2/8/2016 8:10:53 PM	B31999
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.755	0.989		pCi/L	1	2/16/2016	R32295
Radium-226 ±	0.667	0.989		pCi/L	1	2/16/2016	R32295
Radium-228	0.583	0.726		pCi/L	1	2/16/2016	R32295
Radium-228 ±	0.38	0.726		pCi/L	1	2/16/2016	R32295
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.3	0.10		mg/L	1	2/16/2016 9:14:11 PM	R32210
Chloride	62	10		mg/L	20	2/16/2016 9:26:36 PM	R32210
Sulfate	1000	25		mg/L	50	2/16/2016 11:12:24 AM	R32200
Nitrate+Nitrite as N	ND	1.0		mg/L	5	2/16/2016 8:49:22 PM	R32210
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2040	20.0	*	mg/L	1	2/10/2016 3:47:00 PM	23638
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	2/11/2016	R32129
SM4500-H+B: PH							Analyst: MRA
pH	8.05	1.68	H	pH units	1	2/8/2016 3:59:56 PM	R32011
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Barium	0.039	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Boron	0.064	0.040		mg/L	1	2/24/2016 11:26:24 AM	B32368
Cadmium	ND	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Chromium	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Cobalt	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Copper	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Iron	ND	0.020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Manganese	ND	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Molybdenum	ND	0.0080		mg/L	1	2/24/2016 11:26:24 AM	B32368
Nickel	ND	0.010		mg/L	1	2/24/2016 11:26:24 AM	B32368
Silver	ND	0.0050		mg/L	1	2/24/2016 11:26:24 AM	B32368
Zinc	0.036	0.010		mg/L	1	2/24/2016 11:26:24 AM	B32368
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	2/10/2016 12:07:57 PM	23640

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 2/4/2016 9:20:00 AM

Lab ID: 1602208-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:25:12 PM	23604
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1221	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1232	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1242	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1248	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1254	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1260	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Surr: Decachlorobiphenyl	54.8	26.1-140		%Rec	1	2/17/2016 7:54:09 AM	23676
Surr: Tetrachloro-m-xylene	33.2	15-123		%Rec	1	2/17/2016 7:54:09 AM	23676
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	2/8/2016 2:56:32 PM	23596
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/8/2016 2:56:32 PM	23596
Surr: DNOP	104	70-141		%Rec	1	2/8/2016 2:56:32 PM	23596
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 5:42:13 PM	R31967
Surr: BFB	85.4	49.5-130		%Rec	1	2/5/2016 5:42:13 PM	R31967
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
1-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
2-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
Benzo(a)pyrene	ND	0.070		µg/L	1	2/17/2016 10:20:33 AM	23677
Surr: Benzo(e)pyrene	51.0	33.4-129		%Rec	1	2/17/2016 10:20:33 AM	23677
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 2/4/2016 9:20:00 AM

Lab ID: 1602208-001

Matrix: AQUEOUS

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 6:44:04 AM	B31998
Surr: 1,2-Dichloroethane-d4	90.4	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: Dibromofluoromethane	97.5	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: Toluene-d8	102	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	2/18/2016	23801

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1602208-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:40:14 PM	23604
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 6:06:58 PM	R31967
Surr: BFB	88.4	49.5-130		%Rec	1	2/5/2016 6:06:58 PM	R31967
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Naphthalene	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Acetone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromodichloromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromoform	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromomethane	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Butanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Carbon disulfide	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloroethane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloromethane	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
cis-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Dibromochloromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Dibromomethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,4-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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 1602208

Date Reported: 2/24/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1602208-002

Matrix: TRIP BLANK

Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2,2-Dichloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Hexachlorobutadiene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Hexanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Isopropylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Isopropyltoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Methyl-2-pentanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
n-Butylbenzene	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
n-Propylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
sec-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Styrene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
tert-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
trans-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Trichlorofluoromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 7:12:24 AM	B31998
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: Dibromofluoromethane	99.5	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: Toluene-d8	101	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989628		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989629		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			
Nickel	0.47	0.010	0.5000	0	94.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B32368		RunNo: 32368							
Prep Date:	Analysis Date: 2/24/2016		SeqNo: 989630		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	95.9	50	150			
Barium	0.0021	0.0020	0.002000	0	105	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	LLLCS-B		SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	B32368		RunNo:	32368			
Prep Date:			Analysis Date:	2/24/2016		SeqNo:	989630		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	100	50	150			
Cadmium	ND	0.0020	0.002000	0	85.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	0.0064	0.0060	0.006000	0	107	50	150			
Iron	ND	0.020	0.02000	0	90.8	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.010	0.0080	0.008000	0	130	50	150			
Nickel	ND	0.010	0.005000	0	101	50	150			
Silver	ND	0.0050	0.005000	0	95.0	50	150			
Zinc	ND	0.010	0.005000	0	90.2	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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: B31999			RunNo: 31999						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978440		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: B31999			RunNo: 31999						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978441		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.7	50	150			
Selenium	ND	0.0010	0.001000	0	88.9	50	150			
Uranium	ND	0.00050	0.0005000	0	98.6	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: B31999			RunNo: 31999						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978442		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: C32026			RunNo: 32026						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 979376		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	98.5	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: C32026			RunNo: 32026						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 979378		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	90.1	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	C32026	RunNo:	32026					
Prep Date:		Analysis Date:	2/9/2016	SeqNo:	979380	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23640	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	23640	RunNo:	32041					
Prep Date:	2/9/2016	Analysis Date:	2/10/2016	SeqNo:	979810	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-23640	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	23640	RunNo:	32041					
Prep Date:	2/9/2016	Analysis Date:	2/10/2016	SeqNo:	979811	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

B Analyte detected in the 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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R32200		RunNo: 32200							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984262		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R32200		RunNo: 32200							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984263		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R32210		RunNo: 32210							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984551		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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R32210		RunNo: 32210							
Prep Date:	Analysis Date: 2/16/2016		SeqNo: 984552		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	99.4	90	110			
Chloride	5.0	0.50	5.000	0	99.0	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23604		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978001		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-23604		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	23604		RunNo:	31988				
Prep Date:	2/8/2016		Analysis Date:	2/8/2016		SeqNo:	978002		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130				

Sample ID	LCSD-23604		SampType: LCSD		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSS02		Batch ID: 23604		RunNo: 31988					
Prep Date:	2/8/2016		Analysis Date: 2/8/2016		SeqNo: 978003		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	123	70	130	4.17	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23596		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/5/2016		Analysis Date: 2/8/2016		SeqNo: 977994		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		100	70	141			

Sample ID	LCS-23596		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 23596		RunNo: 31978					
Prep Date:	2/5/2016		Analysis Date: 2/8/2016		SeqNo: 977995		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.49		0.5000		97.8	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977541	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	90.6	80	120			
Surr: BFB	20		20.00		97.9	49.5	130			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R31967	RunNo:	31967					
Prep Date:		Analysis Date:	2/5/2016	SeqNo:	977542	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	17		20.00		83.7	49.5	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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23676		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984090		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	3.3		2.500		132	26.1	140			
Surr: Tetrachloro-m-xylene	2.6		2.500		104	15	123			

Sample ID	LCS-23676		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 23676		RunNo: 32193					
Prep Date:	2/11/2016		Analysis Date: 2/17/2016		SeqNo: 984091		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	57.3	15	131			
Aroclor 1260	4.7	1.0	5.000	0	94.0	15	162			
Surr: Decachlorobiphenyl	2.3		2.500		92.0	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.2	15	123			

Sample ID	LCSD-23676	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	23676	RunNo:	32193					
Prep Date:	2/11/2016	Analysis Date:	2/17/2016	SeqNo:	984092	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	56.4	15	131	1.55	24.4	
Aroclor 1260	4.5	1.0	5.000	0	90.4	15	162	3.99	28	
Surr: Decachlorobiphenyl	2.2		2.500		87.2	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	15	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B31998			RunNo: 31998						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 978345		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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: B31998			RunNo: 31998						
Prep Date:	Analysis Date: 2/9/2016			SeqNo: 978345		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	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID 100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: B31998			RunNo: 31998						
Prep Date:	Analysis Date: 2/8/2016			SeqNo: 978346		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	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	100ng lcs2	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	B31998	RunNo:	31998					
Prep Date:		Analysis Date:	2/8/2016	SeqNo:	978346	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	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	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#: 1602208

24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984104	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	9.8		20.00		48.8	33.4	129			

Sample ID	LCS-23677		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984239	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	78	2.0	80.00	0	97.6	54.6	110			
1-Methylnaphthalene	79	2.0	80.20	0	98.2	49.1	116			
2-Methylnaphthalene	79	2.0	80.00	0	98.8	52.5	111			
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107			
Surr: Benzo(e)pyrene	10		20.00		50.0	33.4	129			

Sample ID	LCSD-23677		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	23677		RunNo:	32189			
Prep Date:	2/11/2016		Analysis Date:	2/17/2016		SeqNo:	984240	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	54.6	110	3.55	20	
1-Methylnaphthalene	82	2.0	80.20	0	102	49.1	116	3.43	20	
2-Methylnaphthalene	82	2.0	80.00	0	102	52.5	111	3.47	20	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	3.85	20	
Surr: Benzo(e)pyrene	10		20.00		51.4	33.4	129	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23801	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	23801	RunNo:	32220					
Prep Date:	2/18/2016	Analysis Date:	2/18/2016	SeqNo:	984921	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-23801	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	23801	RunNo:	32220					
Prep Date:	2/18/2016	Analysis Date:	2/18/2016	SeqNo:	984922	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	64.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R32129		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R32129		RunNo:	32129				
Prep Date:			Analysis Date:	2/11/2016		SeqNo:	982291		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R32129			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R32129		RunNo:	32129			
Prep Date:				Analysis Date:	2/11/2016		SeqNo:	982292	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.485		0.5000	0	97.0	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R32295		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R32295		RunNo:	32295			
Prep Date:			Analysis Date:	2/16/2016		SeqNo:	987217		Units:	pCi/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-0.078	0.841								
Radium-226 ±	0.357	0.841								
Radium-228	0.165	0.797								
Radium-228 ±	0.36	0.797								

Qualifiers:

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

B Analyte detected in the 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#: 1602208

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23638		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	23638		RunNo:	32048				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979976		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-23638		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	23638		RunNo:	32048				
Prep Date:	2/9/2016		Analysis Date:	2/10/2016		SeqNo:	979977		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1030	20.0	1000	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
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1602208**

RcptNo: **1**

Received by/date:

JA

02/05/16

Logged By: **Ashley Gallegos**

2/5/2016 10:05:00 AM

AG

Completed By: **Ashley Gallegos**

2/5/2016 11:17:10 AM

AG

Reviewed By:

JA

02/05/16

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: *6*
(<2 or >12 unless noted)
Adjusted? *No*
Checked by: *JA*

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	Not Present			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly Temporary RO Reject Sample Details



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	2/4/2016 @ 9:15 a.m.
End Date and Time	2/4/2016 @ 9:30 a.m.

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Pans / Sample Intervals	One
-------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Preservatives												
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O8	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X			X					pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc.)	2/4/2016 Tmp. 30.2 °F, Humidity 51%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time	

Field Temp. 18.5C	Field pH 7.66
-------------------	---------------

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Energy Minerals & Natural Resources Department Cash Remittance Report (CRR) Header

Location:
Santa Fe - OCD

CRR Number:
CRR0039280

Created By:
DeVargas, Lorraine

Creation Date and Time:
2/29/2016 8:31:58 AM

Collection Period:
2/29/2016 through 2/29/2016

Cash Remittance Report Lines in this CRR bundle:

Department	RevCode	FundCode	RptCat	BudRef	ClassCode	Receipt Amount	Collect
0710000000	461402	40110	0710	116	50000	\$2,700.00	\$2,700.00

Summary Total Amounts:

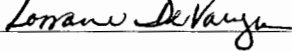
CRR Totals	
Receipts:	\$2,700.00
Collected:	\$2,700.00
OUAmount:	\$0.00

Comments:

Civil Penalties WQA-OCD-CO-2015-002 Please change RevCode to 292900

Remember: Please print a copy of this CRR Transfer Header and mail it with the accompanying receipts to Santa Fe.

Print Name: DeVargas, Lorraine

Signature: 

Print Name: _____

Signature: _____

[Return to the Managers section](#)

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 02/19/2016
Check Amount \$ 2,700.00
Vendor No 5126527
Payment Document 2000021259
Company Code 1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
02/17/2016	021716	STIPULATED PENALTY FOR JANUARY 2016	2,700.00	0.00	2,700.00

Payment document	Check number	Date	Currency	Payment amount
2000021259	1000320783	02/19/2016	USD	*****2,700.00*

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

EEE0006508

Date: 02/29/2016

OFFICIAL RECEIPT

Received From: Holly Frontier Navajo Refinery



Dollars

Center Code	Revenue Code	Amount	Work Order No.
0710000000	461402	2,700. ⁰⁰	

Center Code	Revenue Code	Amount	Work Order No.

State Treasurer Deposit Number _____

Total \$ 2,700.⁰⁰

Description: Civil Penalties
WDA-OCB-CO-2015-002

Signed: Lorraine DeVega



February 23, 2016

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail
7014 3490 0000 6269 5833

**Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
January 2015 ACO – Civil Penalty Payment
HollyFrontier Navajo LLC
Artesia Refinery**

Dear Director:

Enclosed please find a check in the amount of \$2,700 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for January 2016 submitted electronically on February 11, 2016. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
 HFC: Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
 160223 RO Reject ACO – Civil Penalty Payment

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

RECEIVED OCD
2016 FEB 29 A 0:32

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, February 16, 2016 10:51 AM
To: 'Denton, Scott'; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert
Subject: RE: WQA-OCD-C0-2015-002 ACO RO Reject Water Discharge Monthly Report for January 2016

Scott, et al.:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject report and concurs with the Permittee's calculated penalty amount of \$2,700.

Please contact me if you have questions. Thank you.

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

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

From: Denton, Scott [mailto:Scott.Denton@HollyFrontier.com]
Sent: Friday, February 12, 2016 12:35 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Cc: Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>; McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>
Subject: ACO Monthly Report for January 2016

Jim & Carl,

Attached is the monthly report for January concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton

Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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February 11, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – January 2016 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's January 2016 monthly report, for the period of January 1-31, 2016, under the Order.

Specifically, this report covers the January 2016 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire January reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from January 1 through January 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from January 1 through January 31.

Navajo has calculated a penalty of \$2,700 for January 2016. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 27 days in January. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on January 5, 2016. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Navajo is currently preparing a notification to submit to OCD for Discharge Permit GW-028 authorization regarding installation of a third permanent primary RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection, or other options for discharge, of RO reject fluid.

On January 12, 2016, Navajo submitted formal comments to OCD regarding the draft modified conditions to Discharge Permit GW-028 that were posted for public comment. OCD issued the final modified permit conditions on February 4, 2016.

Navajo is currently preparing an early submittal of the Renewal Application for Discharge Permit GW-028. The Renewal Application will include a permit application for construction and operation of water management ponds for evaporation of RO reject fluid and additional potential fluid streams.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
1/1/2016	124	107	231	7,920	100	3443	11,363
1/2/2016	132	106	238	8,160	100	3440	11,600
1/3/2016	133	108	241	8,263	103	3537	11,800
1/4/2016	136	106	242	8,297	108	3692	11,989
1/5/2016	128	106	234	8,023	105	3593	11,616
1/6/2016	128	105	233	7,989	105	3606	11,595
1/7/2016	129	99	228	7,817	108	3696	11,513
1/8/2016	130	81	211	7,234	113	3873	11,107
1/9/2016	132	72	204	6,994	118	4046	11,040
1/10/2016	129	75	204	6,994	121	4137	11,131
1/11/2016	129	79	208	7,131	117	4016	11,147
1/12/2016	131	83	214	7,337	117	3996	11,333
1/13/2016	131	87	218	7,474	118	4044	11,518
1/14/2016	131	80	211	7,234	121	4146	11,380
1/15/2016	130	75	205	7,029	121	4149	11,178
1/16/2016	130	85	215	7,371	117	4010	11,381
1/17/2016	129	89	218	7,474	117	4021	11,495
1/18/2016	128	81	209	7,166	114	3913	11,079
1/19/2016	131	86	217	7,440	125	4284	11,724
1/20/2016	129	82	211	7,234	119	4090	11,324
1/21/2016	129	85	214	7,337	100	3423	10,760
1/22/2016	127	75	202	6,926	124	4244	11,170
1/23/2016	130	83	213	7,303	125	4285	11,588
1/24/2016	89	82	171	5,863	107	3684	9,547
1/25/2016	95	86	181	6,206	126	4332	10,538
1/26/2016	90	82	172	5,897	129	4406	10,303
1/27/2016	91	79	170	5,829	100	3439	9,268
1/28/2016	90	83	173	5,931	96	3280	9,211
1/29/2016	92	78	170	5,829	79	2717	8,546
1/30/2016	88	92	180	6,171	130	4447	10,618
1/31/2016	94	85	179	6,137	137	4709	10,846

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties – January 2016

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	27	\$2,700
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$2,700

Attachment 3
Analytical Lab Report



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

January 28, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1601099

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/6/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601099

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 1/5/2016 9:30:00 AM

Lab ID: 1601099-001

Matrix: AQUEOUS

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	1/6/2016 1:32:23 PM	A31277
Lead	ND	0.0025		mg/L	5	1/6/2016 1:32:23 PM	A31277
Selenium	0.010	0.0050		mg/L	5	1/6/2016 1:32:23 PM	A31277
Uranium	0.0060	0.0025		mg/L	5	1/6/2016 1:32:23 PM	A31277
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.66	0.702		pCi/L	1	1/18/2016	R31549
Radium-226 ±	0.756	0.702		pCi/L	1	1/18/2016	R31549
Radium-228	0.359	0.727		pCi/L	1	1/18/2016	R31549
Radium-228 ±	0.347	0.727		pCi/L	1	1/18/2016	R31549
EPA METHOD 300.0: ANIONS							Analyst: SRM
Fluoride	3.5	2.0		mg/L	20	1/6/2016 7:19:06 PM	R31305
Chloride	490	50		mg/L	100	1/8/2016 2:52:36 PM	R31350
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	1/6/2016 7:19:06 PM	R31305
Nitrogen, Nitrate (As N)	2.0	0.10		mg/L	1	1/6/2016 7:06:41 PM	R31305
Sulfate	2100	50		mg/L	100	1/8/2016 2:52:36 PM	R31350
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4000	200	*D	mg/L	1	1/9/2016 1:12:00 PM	23119
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	1/12/2016	R31534
SM4500-H+B: PH							Analyst: JRR
pH	7.90	1.68	H	pH units	1	1/8/2016 6:09:48 PM	R31363
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	1/7/2016 2:02:10 PM	B31306
Barium	0.062	0.0020		mg/L	1	1/7/2016 2:02:10 PM	B31306
Boron	0.11	0.040		mg/L	1	1/7/2016 2:02:10 PM	B31306
Cadmium	ND	0.0020		mg/L	1	1/7/2016 2:02:10 PM	B31306
Chromium	ND	0.0060		mg/L	1	1/7/2016 2:02:10 PM	B31306
Cobalt	0.0081	0.0060		mg/L	1	1/7/2016 2:02:10 PM	B31306
Copper	ND	0.0060		mg/L	1	1/7/2016 2:02:10 PM	B31306
Iron	ND	0.020		mg/L	1	1/7/2016 2:02:10 PM	B31306
Manganese	ND	0.0020		mg/L	1	1/7/2016 2:02:10 PM	B31306
Molybdenum	ND	0.0080		mg/L	1	1/7/2016 2:02:10 PM	B31306
Nickel	ND	0.010		mg/L	1	1/7/2016 2:02:10 PM	B31306
Silver	ND	0.0050		mg/L	1	1/7/2016 2:02:10 PM	B31306
Zinc	0.028	0.010		mg/L	1	1/7/2016 2:02:10 PM	B31306
EPA METHOD 245.1: MERCURY							Analyst: pmf

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601099

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 1/5/2016 9:30:00 AM

Lab ID: 1601099-001

Matrix: AQUEOUS

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	1/7/2016 5:06:46 PM	23109
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/11/2016 1:44:54 PM	23126
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Aroclor 1221	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Aroclor 1232	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Aroclor 1242	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Aroclor 1248	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Aroclor 1254	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Aroclor 1260	ND	1.0		µg/L	1	1/18/2016 1:31:00 PM	23160
Surr: Decachlorobiphenyl	84.0	17.7-151		%REC	1	1/18/2016 1:31:00 PM	23160
Surr: Tetrachloro-m-xylene	53.2	20.6-151		%REC	1	1/18/2016 1:31:00 PM	23160
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/11/2016 11:03:11 AM	23110
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/11/2016 11:03:11 AM	23110
Surr: DNOP	104	70-141		%REC	1	1/11/2016 11:03:11 AM	23110
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/7/2016 11:23:15 AM	A31304
Surr: BFB	89.1	49.5-130		%REC	1	1/7/2016 11:23:15 AM	A31304
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	1/27/2016 7:55:12 PM	23161
1-Methylnaphthalene	ND	2.0		µg/L	1	1/27/2016 7:55:12 PM	23161
2-Methylnaphthalene	ND	2.0		µg/L	1	1/27/2016 7:55:12 PM	23161
Benzo(a)pyrene	ND	0.070		µg/L	1	1/27/2016 7:55:12 PM	23161
Surr: Benzo(e)pyrene	63.4	33.4-129		%REC	1	1/27/2016 7:55:12 PM	23161
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Toluene	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Ethylbenzene	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Carbon Tetrachloride	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Chloroform	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,1-Dichloroethane	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,1-Dichloroethene	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1601099**

Date Reported: **1/28/2016**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 1/5/2016 9:30:00 AM

Lab ID: 1601099-001

Matrix: AQUEOUS

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
Methylene Chloride	ND	3.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Vinyl chloride	ND	1.0		µg/L	1	1/7/2016 12:30:43 PM	R31318
Xylenes, Total	ND	1.5		µg/L	1	1/7/2016 12:30:43 PM	R31318
Surr: 1,2-Dichloroethane-d4	98.5	70-130		%REC	1	1/7/2016 12:30:43 PM	R31318
Surr: 4-Bromofluorobenzene	95.5	70-130		%REC	1	1/7/2016 12:30:43 PM	R31318
Surr: Dibromofluoromethane	94.9	70-130		%REC	1	1/7/2016 12:30:43 PM	R31318
Surr: Toluene-d8	97.7	70-130		%REC	1	1/7/2016 12:30:43 PM	R31318
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	1/14/2016	23205

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601099

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1601099-002

Matrix: TRIP BLANK

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/11/2016 2:05:35 PM	23126
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/7/2016 12:06:11 PM	A31304
Surr: BFB	92.8	49.5-130		%REC	1	1/7/2016 12:06:11 PM	A31304
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Toluene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Ethylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Naphthalene	ND	2.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1-Methylnaphthalene	ND	4.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
2-Methylnaphthalene	ND	4.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Acetone	ND	10		µg/L	1	1/7/2016 12:59:40 PM	R31318
Bromobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Bromodichloromethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Bromoform	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Bromomethane	ND	3.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
2-Butanone	ND	10		µg/L	1	1/7/2016 12:59:40 PM	R31318
Carbon disulfide	ND	10		µg/L	1	1/7/2016 12:59:40 PM	R31318
Carbon Tetrachloride	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Chlorobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Chloroethane	ND	2.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Chloroform	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Chloromethane	ND	3.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
2-Chlorotoluene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
4-Chlorotoluene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
cis-1,2-DCE	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Dibromochloromethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Dibromomethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601099

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1601099-002

Matrix: TRIP BLANK

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1-Dichloroethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1-Dichloroethene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2-Dichloropropane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,3-Dichloropropane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
2,2-Dichloropropane	ND	2.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1-Dichloropropene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Hexachlorobutadiene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
2-Hexanone	ND	10		µg/L	1	1/7/2016 12:59:40 PM	R31318
Isopropylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
4-Isopropyltoluene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
4-Methyl-2-pentanone	ND	10		µg/L	1	1/7/2016 12:59:40 PM	R31318
Methylene Chloride	ND	3.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
n-Butylbenzene	ND	3.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
n-Propylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
sec-Butylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Styrene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
tert-Butylbenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
trans-1,2-DCE	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Trichlorofluoromethane	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Vinyl chloride	ND	1.0		µg/L	1	1/7/2016 12:59:40 PM	R31318
Xylenes, Total	ND	1.5		µg/L	1	1/7/2016 12:59:40 PM	R31318
Surr: 1,2-Dichloroethane-d4	96.2	70-130		%REC	1	1/7/2016 12:59:40 PM	R31318
Surr: 4-Bromofluorobenzene	97.1	70-130		%REC	1	1/7/2016 12:59:40 PM	R31318
Surr: Dibromofluoromethane	95.3	70-130		%REC	1	1/7/2016 12:59:40 PM	R31318
Surr: Toluene-d8	97.0	70-130		%REC	1	1/7/2016 12:59:40 PM	R31318

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958208		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958209		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	109	85	115			
Barium	0.50	0.0020	0.5000	0	99.6	85	115			
Boron	0.50	0.040	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.3	85	115			
Chromium	0.49	0.0060	0.5000	0	97.8	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Copper	0.48	0.0060	0.5000	0	97.0	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.0	85	115			
Silver	0.092	0.0050	0.1000	0	91.8	85	115			
Zinc	0.48	0.010	0.5000	0	95.5	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958210		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	100	50	150			
Barium	0.0020	0.0020	0.002000	0	101	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: B31306			RunNo: 31306				
Prep Date:			Analysis Date: 1/7/2016			SeqNo: 958210		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	99.6	50	150			
Cadmium	0.0021	0.0020	0.002000	0	103	50	150			
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Cobalt	ND	0.0060	0.006000	0	94.7	50	150			
Copper	0.0062	0.0060	0.006000	0	103	50	150			
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Molybdenum	ND	0.0080	0.008000	0	78.8	50	150			
Nickel	ND	0.010	0.005000	0	143	50	150			
Silver	ND	0.0050	0.005000	0	67.4	50	150			
Zinc	ND	0.010	0.005000	0	144	50	150			

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: B31306			RunNo: 31306				
Prep Date:			Analysis Date: 1/7/2016			SeqNo: 958215		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.023	0.020	0.02000	0	114	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A31277		RunNo: 31277					
Prep Date:			Analysis Date: 1/6/2016		SeqNo: 957740		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	104	85	115			
Lead	0.012	0.00050	0.01250	0	97.9	85	115			
Selenium	0.028	0.0010	0.02500	0	112	85	115			
Uranium	0.012	0.00050	0.01250	0	97.7	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A31277		RunNo: 31277					
Prep Date:			Analysis Date: 1/6/2016		SeqNo: 957742		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	ND	0.00050	0.0005000	0	99.1	50	150			
Selenium	0.0011	0.0010	0.001000	0	114	50	150			
Uranium	ND	0.00050	0.0005000	0	98.0	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: A31277			RunNo: 31277					
Prep Date:		Analysis Date: 1/6/2016			SeqNo: 957743		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23109		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	23109		RunNo:	31316				
Prep Date:	1/7/2016		Analysis Date:	1/7/2016		SeqNo:	958535		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-23109		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 23109		RunNo: 31316					
Prep Date:	1/7/2016		Analysis Date: 1/7/2016		SeqNo: 958536		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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType: mblk			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R31305			RunNo: 31305					
Prep Date:		Analysis Date: 1/6/2016			SeqNo: 958138		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R31305		RunNo: 31305					
Prep Date:			Analysis Date: 1/6/2016		SeqNo: 958139		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	96.5	90	110			
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	94.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R31350			RunNo: 31350					
Prep Date:		Analysis Date: 1/8/2016			SeqNo: 959773		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R31350		RunNo: 31350					
Prep Date:			Analysis Date: 1/8/2016		SeqNo: 959774		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.6	90	110			
Sulfate	9.8	0.50	10.00	0	98.2	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23126		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	23126		RunNo:	31378				
Prep Date:	1/8/2016		Analysis Date:	1/12/2016		SeqNo:	960604		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-23126		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	23126		RunNo:	31378				
Prep Date:	1/8/2016		Analysis Date:	1/12/2016		SeqNo:	960605		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.096	0.010	0.1000	0	95.6	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23110		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 23110		RunNo: 31293					
Prep Date:	1/7/2016		Analysis Date: 1/7/2016		SeqNo: 958706		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		100	70	141			

Sample ID	LCS-23110		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 23110		RunNo: 31354					
Prep Date:	1/7/2016		Analysis Date: 1/11/2016		SeqNo: 959930		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.0	1.0	5.000	0	119	52.4	154			
Surr: DNOP	0.60		0.5000		119	70	141			

Sample ID	LCSD-23110		SampType: LCSD		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSS02		Batch ID: 23110		RunNo: 31354					
Prep Date:	1/7/2016		Analysis Date: 1/11/2016		SeqNo: 960009		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.9	52.4	154	17.6	28.3	
Surr: DNOP	0.47		0.5000		93.8	70	141	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: A31304		RunNo: 31304					
Prep Date:			Analysis Date: 1/7/2016		SeqNo: 958494		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		90.6	49.5	130			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: A31304		RunNo: 31304					
Prep Date:			Analysis Date: 1/7/2016		SeqNo: 958495		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.1	80	120			
Surr: BFB	20		20.00		97.7	49.5	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23160		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 23160		RunNo: 31486					
Prep Date:	1/12/2016		Analysis Date: 1/18/2016		SeqNo: 963636		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.8		2.500		112	17.7	151			
Surr: Tetrachloro-m-xylene	2.1		2.500		83.2	20.6	151			

Sample ID	LCS-23160		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 23160		RunNo: 31486					
Prep Date:	1/12/2016		Analysis Date: 1/18/2016		SeqNo: 963637		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.2	1.0	5.000	0	43.7	15	131			
Aroclor 1260	4.3	1.0	5.000	0	85.8	15	162			
Surr: Decachlorobiphenyl	2.6		2.500		104	17.7	151			
Surr: Tetrachloro-m-xylene	1.7		2.500		66.8	20.6	151			

Sample ID	LCSD-23160	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	23160	RunNo:	31486					
Prep Date:	1/12/2016	Analysis Date:	1/18/2016	SeqNo:	963638	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.4	1.0	5.000	0	47.5	15	131	8.33	24.4	
Aroclor 1260	4.4	1.0	5.000	0	87.9	15	162	2.49	28	
Surr: Decachlorobiphenyl	2.4		2.500		97.6	17.7	151	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	20.6	151	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R31318			RunNo: 31318					
Prep Date:		Analysis Date: 1/7/2016			SeqNo: 958568		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.3	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	19	1.0	20.00	0	95.6	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R31318			RunNo: 31318					
Prep Date:		Analysis Date: 1/7/2016			SeqNo: 958569		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R31318			RunNo: 31318					
Prep Date:		Analysis Date: 1/7/2016			SeqNo: 958569	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R31318	RunNo:	31318					
Prep Date:		Analysis Date:	1/7/2016	SeqNo:	958569	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.3	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23161		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	23161		RunNo:	31727			
Prep Date:	1/12/2016		Analysis Date:	1/27/2016		SeqNo:	970959	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	13		20.00		65.7	33.4	129			

Sample ID	LCS-23161		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	23161		RunNo:	31727			
Prep Date:	1/12/2016		Analysis Date:	1/27/2016		SeqNo:	970960	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	29	2.0	40.00	0	72.2	54.6	110			
1-Methylnaphthalene	29	2.0	40.10	0	72.1	49.1	116			
2-Methylnaphthalene	29	2.0	40.00	0	73.0	52.5	111			
Benzo(a)pyrene	0.18	0.070	0.2510	0	71.7	62	107			
Surr: Benzo(e)pyrene	14		20.00		71.0	33.4	129			

Sample ID	LCSD-23161		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	23161		RunNo:	31727			
Prep Date:	1/12/2016		Analysis Date:	1/27/2016		SeqNo:	970961	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	31	2.0	40.00	0	77.0	54.6	110	6.37	20	
1-Methylnaphthalene	31	2.0	40.10	0	77.0	49.1	116	6.56	20	
2-Methylnaphthalene	31	2.0	40.00	0	77.4	52.5	111	5.85	20	
Benzo(a)pyrene	0.19	0.070	0.2510	0	75.7	62	107	5.41	20	
Surr: Benzo(e)pyrene	14		20.00		71.4	33.4	129	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23205	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	23205	RunNo:	31418					
Prep Date:	1/14/2016	Analysis Date:	1/14/2016	SeqNo:	961552	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-23205	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	23205	RunNo:	31418					
Prep Date:	1/14/2016	Analysis Date:	1/14/2016	SeqNo:	961553	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	24	2.5	20.00	0	119	64.4	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R31534		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R31534		RunNo:	31534				
Prep Date:			Analysis Date:	1/12/2016		SeqNo:	965188		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R31534		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R31534		RunNo: 31534					
Prep Date:			Analysis Date: 1/12/2016		SeqNo: 965189		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.515		0.5000	0	103	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#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R31549		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R31549		RunNo:	31549			
Prep Date:			Analysis Date:	1/18/2016		SeqNo:	965696	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.468	0.573								
Radium-226 ±	0.435	0.573								
Radium-228	0.175	0.698								
Radium-228 ±	0.319	0.698								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601099

28-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-23119		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	23119		RunNo:	31342				
Prep Date:	1/7/2016		Analysis Date:	1/9/2016		SeqNo:	959480		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-23119		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	23119		RunNo:	31342				
Prep Date:	1/7/2016		Analysis Date:	1/9/2016		SeqNo:	959481		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1010	20.0	1000	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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1601099

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

1/6/2016 9:56:00 AM

Completed By: Lindsay Mangin

1/6/2016 9:56:20 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:

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

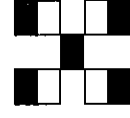
Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	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

Project Manager:	
Robert Combs	
Sampler:	Elizabeth Salsberry
On Ice:	X Yes <input type="checkbox"/> No
Sample Temperature:	3,

email or Fax#: 575-746-5451

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
1/5/15	9:30	liquid	R.O. Reject	2 - 500ml P	1-unpres H2SO4	1601099
1/5/15	9:30	liquid	R.O. Reject	3-40ml VOA	HCL	-001
1/5/15	9:30	liquid	R.O. Reject	1-500ml P	HNO3	-001
1/5/15	9:30	liquid	R.O. Reject	1-125ml P	HNO3	-001
1/5/15	9:30	liquid	R.O. Reject	1-500ml P	NaOH	-001
1/5/15	9:30	liquid	R.O. Reject	2- 1L P	HNO3	-001
1/5/15	9:30	liquid	R.O. Reject	3-40ml VOA	Na2S2O3	-001
1/5/15	9:30	liquid	R.O. Reject	2 - 1L Glass	unpres	-001
1/5/15	9:30	liquid	R.O. Reject	1 - 1L Glass	unpres	-001
1/5/15	9:30	liquid	R.O. Reject	3-40ml VOA	HCL	-001
1/5/15	9:30	liquid	R.O. Reject	1-250ml Glass	unpres	-001
1/5/15	9:30	liquid	R.O. Reject	1 - 1L Glass	H2SO4	-001
1/5/15	9:30	liquid	Trio Blank	2-40ml VOA	HCL	-002

[illegible]

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2,2-Tetrachloroethane; 1,1-Dichloroethane; 1,2-Trichloroethane; 1,1,2-Trichloroethylene; 1,4-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
SVOCs: benzo(a)pyrene, phenol, 1-methylvinylthalene, 2-methylvinylthalene, naphthalene



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	1/5/2016 @ 9:25 a.m.
End Date and Time	1/5/2016 @ 9:40 a.m.

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Parts / Sample Intervals	One
--------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location: ☒ North Field R.O. Reject Discharge ☐ South Field R.O. Reject Discharge

Container	Size	Material	# of Containers	Preservatives							Other	Analysis and/or Method Requested
				Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4		
1	500ml	Plastic	2	X			X					pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc): 1/5/2016 Temp. 33.8 °F, Humidity 100%, Wind Dir. Calm, Wind Speed Calm, Conditions Overcast

Date and Time:

Field Temp. 19.5C

Field pH 7.23

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

January 28, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1601101

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/6/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601101

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 1/5/2016 10:10:00 AM

Lab ID: 1601101-001

Matrix: AQUEOUS

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	1/6/2016 1:42:40 PM	A31277
Lead	ND	0.00050		mg/L	1	1/6/2016 1:37:32 PM	A31277
Selenium	0.0083	0.0050		mg/L	5	1/6/2016 1:42:40 PM	A31277
Uranium	0.0055	0.00050		mg/L	1	1/6/2016 1:37:32 PM	A31277
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.58	0.850		pCi/L	1	1/18/2016	R31549
Radium-226 ±	0.79	0.850		pCi/L	1	1/18/2016	R31549
Radium-228	0.546	0.826		pCi/L	1	1/18/2016	R31549
Radium-228 ±	0.407	0.826		pCi/L	1	1/18/2016	R31549
EPA METHOD 300.0: ANIONS							Analyst: SRM
Fluoride	2.3	0.10		mg/L	1	1/6/2016 7:31:30 PM	R31305
Chloride	400	10		mg/L	20	1/6/2016 7:43:54 PM	R31305
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	1/6/2016 7:43:54 PM	R31305
Nitrogen, Nitrate (As N)	1.6	0.10		mg/L	1	1/6/2016 7:31:30 PM	R31305
Sulfate	1600	25		mg/L	50	1/8/2016 3:05:00 PM	R31350
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3470	20.0	*	mg/L	1	1/7/2016 7:22:00 PM	23090
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	1/12/2016	R31534
SM4500-H+B: PH							Analyst: JRR
pH	8.04	1.68	H	pH units	1	1/8/2016 6:14:20 PM	R31363
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	1/7/2016 2:04:13 PM	B31306
Barium	0.051	0.0020		mg/L	1	1/7/2016 2:04:13 PM	B31306
Boron	0.090	0.040		mg/L	1	1/7/2016 2:04:13 PM	B31306
Cadmium	ND	0.0020		mg/L	1	1/7/2016 2:04:13 PM	B31306
Chromium	ND	0.0060		mg/L	1	1/7/2016 2:04:13 PM	B31306
Cobalt	0.0085	0.0060		mg/L	1	1/7/2016 2:04:13 PM	B31306
Copper	ND	0.0060		mg/L	1	1/7/2016 2:04:13 PM	B31306
Iron	ND	0.020		mg/L	1	1/7/2016 2:04:13 PM	B31306
Manganese	ND	0.0020		mg/L	1	1/7/2016 2:04:13 PM	B31306
Molybdenum	ND	0.0080		mg/L	1	1/7/2016 2:04:13 PM	B31306
Nickel	ND	0.010		mg/L	1	1/7/2016 2:04:13 PM	B31306
Silver	ND	0.0050		mg/L	1	1/7/2016 2:04:13 PM	B31306
Zinc	0.031	0.010		mg/L	1	1/7/2016 2:04:13 PM	B31306
EPA METHOD 245.1: MERCURY							Analyst: pmf

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601101

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 1/5/2016 10:10:00 AM

Lab ID: 1601101-001

Matrix: AQUEOUS

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 245.1: MERCURY							Analyst: pmf
Mercury	ND	0.00020		mg/L	1	1/7/2016 5:08:51 PM	23109
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/11/2016 2:26:15 PM	23126
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Aroclor 1221	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Aroclor 1232	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Aroclor 1242	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Aroclor 1248	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Aroclor 1254	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Aroclor 1260	ND	1.0		µg/L	1	1/18/2016 2:07:07 PM	23160
Surr: Decachlorobiphenyl	96.0	17.7-151		%REC	1	1/18/2016 2:07:07 PM	23160
Surr: Tetrachloro-m-xylene	64.8	20.6-151		%REC	1	1/18/2016 2:07:07 PM	23160
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/11/2016 11:24:38 AM	23110
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/11/2016 11:24:38 AM	23110
Surr: DNOP	102	70-141		%REC	1	1/11/2016 11:24:38 AM	23110
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/7/2016 12:29:54 PM	A31304
Surr: BFB	90.3	49.5-130		%REC	1	1/7/2016 12:29:54 PM	A31304
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	1/27/2016 8:24:29 PM	23161
1-Methylnaphthalene	ND	2.0		µg/L	1	1/27/2016 8:24:29 PM	23161
2-Methylnaphthalene	ND	2.0		µg/L	1	1/27/2016 8:24:29 PM	23161
Benzo(a)pyrene	ND	0.070		µg/L	1	1/27/2016 8:24:29 PM	23161
Surr: Benzo(e)pyrene	61.0	33.4-129		%REC	1	1/27/2016 8:24:29 PM	23161
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Toluene	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Ethylbenzene	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Carbon Tetrachloride	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Chloroform	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,1-Dichloroethane	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,1-Dichloroethene	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601101

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 1/5/2016 10:10:00 AM

Lab ID: 1601101-001

Matrix: AQUEOUS

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst: AG		
Methylene Chloride	ND	3.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Vinyl chloride	ND	1.0		µg/L	1	1/7/2016 1:28:37 PM	R31318
Xylenes, Total	ND	1.5		µg/L	1	1/7/2016 1:28:37 PM	R31318
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	1	1/7/2016 1:28:37 PM	R31318
Surr: 4-Bromofluorobenzene	97.4	70-130		%REC	1	1/7/2016 1:28:37 PM	R31318
Surr: Dibromofluoromethane	101	70-130		%REC	1	1/7/2016 1:28:37 PM	R31318
Surr: Toluene-d8	94.3	70-130		%REC	1	1/7/2016 1:28:37 PM	R31318
TOTAL PHENOLICS BY SW-846 9067					Analyst: SCC		
Phenolics, Total Recoverable	ND	2.5		µg/L	1	1/14/2016	23205

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601101

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1601101-002

Matrix: TRIP BLANK

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	1/11/2016 3:27:54 PM	23126
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/7/2016 12:53:36 PM	A31304
Surr: BFB	91.9	49.5-130		%REC	1	1/7/2016 12:53:36 PM	A31304
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Toluene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Ethylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Naphthalene	ND	2.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1-Methylnaphthalene	ND	4.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
2-Methylnaphthalene	ND	4.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Acetone	ND	10		µg/L	1	1/7/2016 1:57:34 PM	R31318
Bromobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Bromodichloromethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Bromoform	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Bromomethane	ND	3.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
2-Butanone	ND	10		µg/L	1	1/7/2016 1:57:34 PM	R31318
Carbon disulfide	ND	10		µg/L	1	1/7/2016 1:57:34 PM	R31318
Carbon Tetrachloride	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Chlorobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Chloroethane	ND	2.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Chloroform	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Chloromethane	ND	3.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
2-Chlorotoluene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
4-Chlorotoluene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
cis-1,2-DCE	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Dibromochloromethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Dibromomethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601101

Date Reported: 1/28/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1601101-002

Matrix: TRIP BLANK

Received Date: 1/6/2016 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1-Dichloroethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1-Dichloroethene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2-Dichloropropane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,3-Dichloropropane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
2,2-Dichloropropane	ND	2.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1-Dichloropropene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Hexachlorobutadiene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
2-Hexanone	ND	10		µg/L	1	1/7/2016 1:57:34 PM	R31318
Isopropylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
4-Isopropyltoluene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
4-Methyl-2-pentanone	ND	10		µg/L	1	1/7/2016 1:57:34 PM	R31318
Methylene Chloride	ND	3.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
n-Butylbenzene	ND	3.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
n-Propylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
sec-Butylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Styrene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
tert-Butylbenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
trans-1,2-DCE	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Trichlorofluoromethane	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Vinyl chloride	ND	1.0		µg/L	1	1/7/2016 1:57:34 PM	R31318
Xylenes, Total	ND	1.5		µg/L	1	1/7/2016 1:57:34 PM	R31318
Surr: 1,2-Dichloroethane-d4	95.0	70-130		%REC	1	1/7/2016 1:57:34 PM	R31318
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	1/7/2016 1:57:34 PM	R31318
Surr: Dibromofluoromethane	98.8	70-130		%REC	1	1/7/2016 1:57:34 PM	R31318
Surr: Toluene-d8	93.1	70-130		%REC	1	1/7/2016 1:57:34 PM	R31318

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958208		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958209		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	109	85	115			
Barium	0.50	0.0020	0.5000	0	99.6	85	115			
Boron	0.50	0.040	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.3	85	115			
Chromium	0.49	0.0060	0.5000	0	97.8	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Copper	0.48	0.0060	0.5000	0	97.0	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.0	85	115			
Silver	0.092	0.0050	0.1000	0	91.8	85	115			
Zinc	0.48	0.010	0.5000	0	95.5	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958210		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	100	50	150			
Barium	0.0020	0.0020	0.002000	0	101	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958210		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	99.6	50	150			
Cadmium	0.0021	0.0020	0.002000	0	103	50	150			
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Cobalt	ND	0.0060	0.006000	0	94.7	50	150			
Copper	0.0062	0.0060	0.006000	0	103	50	150			
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Molybdenum	ND	0.0080	0.008000	0	78.8	50	150			
Nickel	ND	0.010	0.005000	0	143	50	150			
Silver	ND	0.0050	0.005000	0	67.4	50	150			
Zinc	ND	0.010	0.005000	0	144	50	150			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958215		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.023	0.020	0.02000	0	114	50	150			

Sample ID 1601101-001IMS	SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: Temporary R.O. Rej	Batch ID: B31306		RunNo: 31306							
Prep Date:	Analysis Date: 1/7/2016		SeqNo: 958432		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.60	0.020	0.5000	0.009780	118	70	130			
Barium	0.52	0.0020	0.5000	0.05058	93.3	70	130			
Boron	0.62	0.040	0.5000	0.08985	106	70	130			
Cadmium	0.48	0.0020	0.5000	0	95.8	70	130			
Chromium	0.47	0.0060	0.5000	0.005280	93.6	70	130			
Cobalt	0.44	0.0060	0.5000	0.008500	86.5	70	130			
Copper	0.51	0.0060	0.5000	0	101	70	130			
Iron	0.40	0.020	0.5000	0.01090	78.1	70	130			
Manganese	0.46	0.0020	0.5000	0.0005000	91.8	70	130			
Molybdenum	0.44	0.0080	0.5000	0	88.8	70	130			
Nickel	0.44	0.010	0.5000	0	88.0	70	130			
Silver	0.074	0.0050	0.1000	0	73.7	70	130			
Zinc	0.47	0.010	0.5000	0.03096	87.6	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#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	1601101-001IMSD		SampType: MSD			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	Temporary R.O. Rej		Batch ID: B31306			RunNo: 31306				
Prep Date:			Analysis Date: 1/7/2016			SeqNo: 958433		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.60	0.020	0.5000	0.009780	118	70	130	0.352	20	
Barium	0.53	0.0020	0.5000	0.05058	95.1	70	130	1.73	20	
Boron	0.63	0.040	0.5000	0.08985	108	70	130	1.23	20	
Cadmium	0.49	0.0020	0.5000	0	97.4	70	130	1.66	20	
Chromium	0.48	0.0060	0.5000	0.005280	94.4	70	130	0.791	20	
Cobalt	0.45	0.0060	0.5000	0.008500	88.0	70	130	1.66	20	
Copper	0.51	0.0060	0.5000	0	102	70	130	0.313	20	
Iron	0.44	0.020	0.5000	0.01090	86.1	70	130	9.50	20	
Manganese	0.47	0.0020	0.5000	0.0005000	93.0	70	130	1.28	20	
Molybdenum	0.46	0.0080	0.5000	0	92.8	70	130	4.42	20	
Nickel	0.45	0.010	0.5000	0	89.7	70	130	2.02	20	
Silver	0.074	0.0050	0.1000	0	73.9	70	130	0.298	20	
Zinc	0.48	0.010	0.5000	0.03096	90.2	70	130	2.75	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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A31277			RunNo: 31277						
Prep Date:	Analysis Date: 1/6/2016			SeqNo: 957740		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	104	85	115			
Lead	0.012	0.00050	0.01250	0	97.9	85	115			
Selenium	0.028	0.0010	0.02500	0	112	85	115			
Uranium	0.012	0.00050	0.01250	0	97.7	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A31277			RunNo: 31277						
Prep Date:	Analysis Date: 1/6/2016			SeqNo: 957742		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	ND	0.00050	0.0005000	0	99.1	50	150			
Selenium	0.0011	0.0010	0.001000	0	114	50	150			
Uranium	ND	0.00050	0.0005000	0	98.0	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A31277			RunNo: 31277						
Prep Date:	Analysis Date: 1/6/2016			SeqNo: 957743		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23109		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	23109		RunNo:	31316				
Prep Date:	1/7/2016		Analysis Date:	1/7/2016		SeqNo:	958535		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-23109		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 23109		RunNo: 31316					
Prep Date:	1/7/2016		Analysis Date: 1/7/2016		SeqNo: 958536		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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R31305		RunNo: 31305							
Prep Date:	Analysis Date: 1/6/2016		SeqNo: 958138		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								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R31305		RunNo: 31305							
Prep Date:	Analysis Date: 1/6/2016		SeqNo: 958139		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	96.5	90	110			
Chloride	4.9	0.50	5.000	0	97.8	90	110			
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	94.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R31350		RunNo: 31350							
Prep Date:	Analysis Date: 1/8/2016		SeqNo: 959773		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R31350		RunNo: 31350							
Prep Date:	Analysis Date: 1/8/2016		SeqNo: 959774		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.8	0.50	10.00	0	98.2	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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	1601101-001DMS	SampType:	MS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	Temporary R.O. Rej	Batch ID:	23126	RunNo:	31371					
Prep Date:	1/8/2016	Analysis Date:	1/11/2016	SeqNo:	960526	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.086	0.010	0.1000	0	85.8	40.3	153			

Sample ID	1601101-001DMSD	SampType:	MSD	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	Temporary R.O. Rej	Batch ID:	23126	RunNo:	31371					
Prep Date:	1/8/2016	Analysis Date:	1/11/2016	SeqNo:	960527	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.086	0.010	0.1000	0	86.2	40.3	153	0.568	29.5	

Sample ID	MB-23126	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	23126	RunNo:	31378					
Prep Date:	1/8/2016	Analysis Date:	1/12/2016	SeqNo:	960604	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-23126	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	23126	RunNo:	31378					
Prep Date:	1/8/2016	Analysis Date:	1/12/2016	SeqNo:	960605	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.096	0.010	0.1000	0	95.6	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#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23110	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW	Batch ID:	23110		RunNo:	31293				
Prep Date:	1/7/2016	Analysis Date:	1/7/2016		SeqNo:	958706		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		100	70	141			

Sample ID	LCS-23110		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	23110		RunNo:	31354				
Prep Date:	1/7/2016		Analysis Date:	1/11/2016		SeqNo:	959930		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	6.0	1.0	5.000	0	119	52.4	154				
Surr: DNOP	0.60		0.5000		119	70	141				

Sample ID	LCSD-23110		SampType: LCSD		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSS02		Batch ID: 23110		RunNo: 31354					
Prep Date:	1/7/2016		Analysis Date: 1/11/2016		SeqNo: 960009		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.9	52.4	154	17.6	28.3	
Surr: DNOP	0.47		0.5000		93.8	70	141	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#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: A31304		RunNo: 31304					
Prep Date:			Analysis Date: 1/7/2016		SeqNo: 958494		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		90.6	49.5	130			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: A31304			RunNo: 31304					
Prep Date:		Analysis Date: 1/7/2016			SeqNo: 958495		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.1	80	120			
Surr: BFB	20		20.00		97.7	49.5	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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23160		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 23160		RunNo: 31486					
Prep Date:	1/12/2016		Analysis Date: 1/18/2016		SeqNo: 963636		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.8		2.500		112	17.7	151			
Surr: Tetrachloro-m-xylene	2.1		2.500		83.2	20.6	151			

Sample ID	LCS-23160		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 23160		RunNo: 31486					
Prep Date:	1/12/2016		Analysis Date: 1/18/2016		SeqNo: 963637		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.2	1.0	5.000	0	43.7	15	131			
Aroclor 1260	4.3	1.0	5.000	0	85.8	15	162			
Surr: Decachlorobiphenyl	2.6		2.500		104	17.7	151			
Surr: Tetrachloro-m-xylene	1.7		2.500		66.8	20.6	151			

Sample ID	LCSD-23160	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	23160	RunNo:	31486					
Prep Date:	1/12/2016	Analysis Date:	1/18/2016	SeqNo:	963638	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.4	1.0	5.000	0	47.5	15	131	8.33	24.4	
Aroclor 1260	4.4	1.0	5.000	0	87.9	15	162	2.49	28	
Surr: Decachlorobiphenyl	2.4		2.500		97.6	17.7	151	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	20.6	151	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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R31318			RunNo: 31318					
Prep Date:	Analysis Date: 1/7/2016			SeqNo: 958568		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.3	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	19	1.0	20.00	0	95.6	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R31318			RunNo: 31318					
Prep Date:		Analysis Date: 1/7/2016			SeqNo: 958569		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R31318			RunNo: 31318						
Prep Date:	Analysis Date: 1/7/2016			SeqNo: 958569		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R31318	RunNo:	31318					
Prep Date:		Analysis Date:	1/7/2016	SeqNo:	958569	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.3	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	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#: 1601101

28-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-23161		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	23161		RunNo:	31727			
Prep Date:	1/12/2016		Analysis Date:	1/27/2016		SeqNo:	970959		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	13		20.00		65.7	33.4	129			

Sample ID	LCS-23161		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	23161		RunNo:	31727			
Prep Date:	1/12/2016		Analysis Date:	1/27/2016		SeqNo:	970960		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	29	2.0	40.00	0	72.2	54.6	110			
1-Methylnaphthalene	29	2.0	40.10	0	72.1	49.1	116			
2-Methylnaphthalene	29	2.0	40.00	0	73.0	52.5	111			
Benzo(a)pyrene	0.18	0.070	0.2510	0	71.7	62	107			
Surr: Benzo(e)pyrene	14		20.00		71.0	33.4	129			

Sample ID	LCSD-23161		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	23161		RunNo:	31727			
Prep Date:	1/12/2016		Analysis Date:	1/27/2016		SeqNo:	970961		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	31	2.0	40.00	0	77.0	54.6	110	6.37	20	
1-Methylnaphthalene	31	2.0	40.10	0	77.0	49.1	116	6.56	20	
2-Methylnaphthalene	31	2.0	40.00	0	77.4	52.5	111	5.85	20	
Benzo(a)pyrene	0.19	0.070	0.2510	0	75.7	62	107	5.41	20	
Surr: Benzo(e)pyrene	14		20.00		71.4	33.4	129	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#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23205	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	23205	RunNo:	31418					
Prep Date:	1/14/2016	Analysis Date:	1/14/2016	SeqNo:	961552	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-23205	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	23205	RunNo:	31418					
Prep Date:	1/14/2016	Analysis Date:	1/14/2016	SeqNo:	961553	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	24	2.5	20.00	0	119	64.4	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#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R31534		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R31534		RunNo:	31534				
Prep Date:			Analysis Date:	1/12/2016		SeqNo:	965188		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R31534		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R31534		RunNo: 31534					
Prep Date:			Analysis Date: 1/12/2016		SeqNo: 965189		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.515		0.5000	0	103	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#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R31549		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R31549		RunNo:	31549			
Prep Date:			Analysis Date:	1/18/2016		SeqNo:	965696		Units:	pCi/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.468	0.573								
Radium-226 ±	0.435	0.573								
Radium-228	0.175	0.698								
Radium-228 ±	0.319	0.698								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601101

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-23090		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 23090		RunNo: 31315					
Prep Date:	1/6/2016		Analysis Date: 1/7/2016		SeqNo: 958376		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-23090		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 23090		RunNo: 31315					
Prep Date:	1/6/2016		Analysis Date: 1/7/2016		SeqNo: 958377		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	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: **NAVAJO REFINING CO**

Work Order Number: **1601101**

RcptNo: **1**

Received by/date:

Logged By: **Lindsay Mangin**

1/6/2016 9:56:00 AM

Completed By: **Lindsay Mangin**

1/6/2016 9:58:40 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.

7,1
(<2 or >12 unless noted)
Adjusted? NO

Checked by:

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly Temporary RO Reject Sample Details



HOLLYFRONTIER

The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	1/5/2016 9:55 a.m.
End Date and Time	1/5/2016 10:20 a.m.

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property
Solid <input type="checkbox"/>
Liquid <input checked="" type="checkbox"/>
Sludge <input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Parts / Sample Intervals	One
--------------------------	-----

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge
	<input checked="" type="checkbox"/> South Field R.O. Reject Discharge

Container		Size		Material		# of Containers		Neat (None)		HCL		HNO3		H2SO4		NaOH		Na2S2O3		NaHSO4		Other		Analysis and/or Method Requested	
1		500ml		Plastic		2		X		X				X										pH, Cl, F, SO4, NO2/NO3, TDS	
2		40ml		VOA		3				X														8015 GRO	
3		500ml		Plastic		1						X												6020 total metals, 7470 Hg	
4		125ml		Plastic		1						X												6020 Dissolved Metals	
5		500ml		Plastic		2										X								Cyanide	
6		1L		Plastic		3						X												Radium 226/228	
7		40ml		VOA		2				X														8260 see attached list	
8		1L		Glass		1		X																8270 see attached list	
9		1L		Glass		2		X																8082 PCBs	
10		40ml		VOA		2		X																8015 DRO	
11		40ml		VOA		2				X														Radium 226/228	

Field Data (Weather, Observations, Etc):	1/5/2015 Tmp 33.8 °F, Humidity 100%, Wind Dir. Calm, Wind Speed Calm, Conditions Overcast
Date and Time:	
Field Temp.	19.8
Field pH	7.79

Storage Method
Ice <input checked="" type="checkbox"/>
Refrigerated <input type="checkbox"/>
Other <input type="checkbox"/>

Shipping Media
Ice <input checked="" type="checkbox"/>
Other <input type="checkbox"/>

Energy Minerals & Natural Resources Department Cash Remittance Report (CRR) Header

Location:
Santa Fe - OCD

CRR Number:
CRR0039213

Created By:
DeVargas, Lorraine

Creation Date and Time:
2/16/2016 3:34:06 PM

Collection Period:
2/16/2016 through 2/16/2016

Cash Remittance Report Lines in this CRR bundle:

Department	RevCode	FundCode	RptCat	BudRef	ClassCode	Receipt Amount	Collect
0710000000	461402	40110	0710	116	50000	\$3,100.00	\$3,100.00

Summary Total Amounts:

CRR Totals	
Receipts:	\$3,100.00
Collected:	\$3,100.00
OUAmount:	\$0.00

Comments:

Civil Penalties WQA-OCD-CO-2015-002 Please change RevCode to 292900

**Remember: Please print a copy of this CRR Transfer Header
and mail it with the accompanying receipts to Santa Fe.**

Print Name: DeVargas, Lorraine

Signature: _____

Print Name: _____

Signature: _____

[Return to the Managers section](#)



February 11, 2016

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail
7014 3490 0000 6269 5796

**Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
December 2015 ACO – Civil Penalty Payment
HollyFrontier Navajo LLC
Artesia Refinery**

Dear Director:

Enclosed please find a check in the amount of \$3,100 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for December 2015 submitted electronically on January 15, 2015. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
 HFC: Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
 160211 RO Reject ACO – Civil Penalty Payment

RECEIVED CO.
2016 FEB 16 P 2:27

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 02/10/2016
Check Amount \$ 3,100.00
Vendor No 5126527
Payment Document 2000014350
Company Code 1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
01/29/2016	012916	STIPULATED PENALTIES DEC 2015	3,100.00	0.00	3,100.00

Payment document	Check number	Date	Currency	Payment amount
2000014350	1000319990	02/10/2016	USD	*****3,100.00*

RECEIVED 000
2016 FEB 16 P 2:27

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

EEE0006506

Date: 02/16/2016

OFFICIAL RECEIPT

Received From: Holly Frontier Navajo Refining



* E E E 0 0 0 6 5 0 6 *

Dollars

Center Code	Revenue Code	Amount	Work Order No.
071000000	461402		

Center Code	Revenue Code	Amount	Work Order No.

State Treasurer Deposit Number _____

Total \$ 3,100.00

Description: Civil penalties
WQA-OCD-CO-2015-002

Signed: Lorraine DeKays



RECEIVED OCD
2016 JAN 19 P 2:16

January 14, 2016

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

FEDEX

**Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
November 2015 ACO – Civil Penalty Payment
HollyFrontier Navajo LLC
Artesia Refinery**

Dear Director:

Enclosed please find a check in the amount of \$2,900 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for November 2015 submitted electronically on December 15, 2015. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

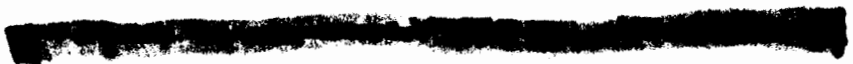
Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
 HFC: Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
 160114. RO Reject ACO – Civil Penalty Payment

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>



HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

RECEIVED OGD

2016 JAN 19 P 2:16

Check Date	01/15/2016
Check Amount	\$ 2,900.00
Vendor No	5126527
Payment Document	2000003857
Company Code	1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
01/14/2016	011416	REIMBURSING ASSETNATION	2,900.00	0.00	2,900.00

Payment document	Check number	Date	Currency	Payment amount
2000003857	1000318026	01/15/2016	USD	*****2,900.00*

↓ PLEASE FOLD ON PERFORATION AND DETACH HERE ↓

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT.

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611 1000318026
01/15/2016

PAY EXACTLY

*****2,900.00*USD

VOID AFTER 180 DAYS

PAY *** TWO THOUSAND NINE HUNDRED and 00 /100 USD***

TO THE
ORDER OF STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225
Bank of America N.A.

Stephen D Wise
AUTHORIZED SIGNATURE

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, January 15, 2016 10:28 AM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert; Denton, Scott
Subject: ACO Monthly Report for December 2015
Attachments: 160115 ACO Monthly Report for December 2015.pdf

Jim & Carl,

Attached is the monthly report for [December](#) concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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January 15, 2016

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – December 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's January 2016 monthly report, for the period of December 1-31, 2015, under the Order.

Specifically, this report covers the December 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire December reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from December 1 through December 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from December 1 through December 31.

Navajo has calculated a penalty of \$3,100 for December 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 31 days in December. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on December 3, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Navajo is currently preparing a notification to submit to OCD for Discharge Permit GW-028 authorization regarding installation of a third permanent primary RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection, or other options for discharge, of RO reject fluid.

In December, Navajo and OCD continued discussion of the conditions of the May 2015 permit modification request to increase the discharge volume. Navajo provided informal comments to draft permit conditions in anticipation of OCD's publication of formal public notice of the proposed permit modification and conditions and opportunity to comment, which was issued in mid-December.

On December 17, Navajo met with OCD to discuss the possible construction of water management ponds for evaporation, to include RO reject fluids and other waters. Permitting approaches were also discussed, and Navajo is in the process of preparing a permit renewal application for GW-028, of which, evaporation pond construction details will be included per OCD guidance.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
12/1/2015	137	146	283	9,703	61	2106	11,809
12/2/2015	140	151	291	9,977	62	2119	12,096
12/3/2015	135	150	285	9,771	68	2316	12,087
12/4/2015	138	150	288	9,874	70	2384	12,258
12/5/2015	137	147	284	9,737	70	2386	12,123
12/6/2015	139	155	294	10,080	70	2400	12,480
12/7/2015	136	148	284	9,737	70	2400	12,137
12/8/2015	140	152	292	10,011	70	2390	12,401
12/9/2015	134	107	241	8,263	71	2422	10,685
12/10/2015	138	112	250	8,571	90	3086	11,657
12/11/2015	127	120	247	8,469	66	2264	10,733
12/12/2015	126	122	248	8,503	66	2256	10,759
12/13/2015	126	121	247	8,469	66	2274	10,743
12/14/2015	129	131	260	8,914	69	2372	11,286
12/15/2015	129	129	258	8,846	79	2724	11,570
12/16/2015	133	133	266	9,120	72	2453	11,573
12/17/2015	131	129	260	8,914	54	1848	10,762
12/18/2015	130	130	260	8,914	57	1939	10,853
12/19/2015	129	127	256	8,777	59	2021	10,798
12/20/2015	127	127	254	8,709	61	2090	10,799
12/21/2015	134	130	264	9,051	62	2126	11,177
12/22/2015	126	126	252	8,640	95	3244	11,884
12/23/2015	135	129	264	9,051	66	2251	11,302
12/24/2015	128	104	232	7,954	65	2217	10,171
12/25/2015	130	102	232	7,954	66	2253	10,207
12/26/2015	126	105	231	7,920	76	2590	10,510
12/27/2015	126	105	231	7,920	118	4033	11,953
12/28/2015	130	108	238	8,160	117	4020	12,180
12/29/2015	129	108	237	8,126	100	3440	11,566
12/30/2015	134	98	232	7,954	105	3617	11,571
12/31/2015	136	105	241	8,263	103	3536	11,799

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - December 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	31	\$3,100
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$3,100

Attachment 3
Analytical Lab Report



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

January 06, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1512236

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512236

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 12/3/2015 9:00:00 AM

Lab ID: 1512236-001

Matrix: AQUEOUS

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0050		mg/L	5	12/11/2015 2:30:12 PM	A30798
Lead	ND	0.00050		mg/L	1	12/9/2015 9:48:48 PM	B30746
Selenium	0.0054	0.0010		mg/L	1	12/9/2015 9:48:48 PM	B30746
Uranium	0.0032	0.00050		mg/L	1	12/9/2015 9:48:48 PM	B30746
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.207	0.980		pCi/L	1	12/17/2016	R31278
Radium-226 ±	0.543	0.980		pCi/L	1	12/17/2016	R31278
Radium-228	0.194	0.680		pCi/L	1	12/17/2016	R31278
Radium-228 ±	0.311	0.680		pCi/L	1	12/17/2016	R31278
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.2	2.0		mg/L	20	12/5/2015 3:40:40 AM	A30652
Chloride	110	25		mg/L	50	12/23/2015 3:12:14 AM	A31049
Sulfate	980	25		mg/L	50	12/23/2015 3:12:14 AM	A31049
Nitrate+Nitrite as N	1.2	1.0		mg/L	5	12/23/2015 3:37:03 AM	R31049
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: SRM
Total Dissolved Solids	1970	20.0	*	mg/L	1	12/13/2015 1:47:00 PM	22696
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	12/9/2015	R31007
SM4500-H+B: PH							Analyst: MRA
pH	7.86	1.68	H	pH units	1	12/7/2015 1:38:04 PM	R30658
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	12/8/2015 8:30:22 PM	B30690
Barium	0.035	0.0020		mg/L	1	12/8/2015 8:30:22 PM	B30690
Boron	0.094	0.040		mg/L	1	12/8/2015 8:30:22 PM	B30690
Cadmium	ND	0.0020		mg/L	1	12/8/2015 8:30:22 PM	B30690
Chromium	ND	0.0060		mg/L	1	12/14/2015 2:34:53 PM	B30821
Cobalt	ND	0.0060		mg/L	1	12/8/2015 8:30:22 PM	B30690
Copper	ND	0.0060		mg/L	1	12/8/2015 8:30:22 PM	B30690
Iron	ND	0.020		mg/L	1	12/8/2015 8:30:22 PM	B30690
Manganese	ND	0.0020		mg/L	1	12/8/2015 8:30:22 PM	B30690
Molybdenum	ND	0.0080		mg/L	1	12/17/2015 2:18:43 PM	B30929
Nickel	ND	0.010		mg/L	1	12/8/2015 8:30:22 PM	B30690
Silver	ND	0.0050		mg/L	1	12/8/2015 8:30:22 PM	B30690
Zinc	0.020	0.010		mg/L	1	12/17/2015 2:18:43 PM	B30929
EPA METHOD 245.1: MERCURY							Analyst: DBD
Mercury	ND	0.00020		mg/L	1	12/11/2015 11:02:05 AM	22710

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512236

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 12/3/2015 9:00:00 AM

Lab ID: 1512236-001

Matrix: AQUEOUS

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	12/9/2015	22664
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Aroclor 1221	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Aroclor 1232	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Aroclor 1242	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Aroclor 1248	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Aroclor 1254	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Aroclor 1260	ND	1.0		µg/L	1	12/11/2015 1:29:36 PM	22699
Surr: Decachlorobiphenyl	75.6	17.7-151		%REC	1	12/11/2015 1:29:36 PM	22699
Surr: Tetrachloro-m-xylene	55.6	20.6-151		%REC	1	12/11/2015 1:29:36 PM	22699
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/7/2015 1:23:00 PM	22645
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	12/7/2015 1:23:00 PM	22645
Surr: DNOP	96.8	72-136		%REC	1	12/7/2015 1:23:00 PM	22645
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/10/2015 12:52:34 AM	A30727
Surr: BFB	86.5	49.5-130		%REC	1	12/10/2015 12:52:34 AM	A30727
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	12/11/2015 7:13:46 AM	22700
1-Methylnaphthalene	ND	2.0		µg/L	1	12/11/2015 7:13:46 AM	22700
2-Methylnaphthalene	ND	2.0		µg/L	1	12/11/2015 7:13:46 AM	22700
Benzo(a)pyrene	ND	0.070		µg/L	1	12/11/2015 7:13:46 AM	22700
Surr: Benzo(e)pyrene	67.8	33.4-129		%REC	1	12/11/2015 7:13:46 AM	22700
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Toluene	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Ethylbenzene	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Carbon Tetrachloride	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Chloroform	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
1,1-Dichloroethane	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
1,1-Dichloroethene	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Methylene Chloride	ND	3.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512236

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 12/3/2015 9:00:00 AM

Lab ID: 1512236-001

Matrix: AQUEOUS

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Vinyl chloride	ND	1.0		µg/L	1	12/8/2015 11:07:53 PM	A30709
Xylenes, Total	ND	1.5		µg/L	1	12/8/2015 11:07:53 PM	A30709
Surr: 1,2-Dichloroethane-d4	107	70-130		%REC	1	12/8/2015 11:07:53 PM	A30709
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	12/8/2015 11:07:53 PM	A30709
Surr: Dibromofluoromethane	107	70-130		%REC	1	12/8/2015 11:07:53 PM	A30709
Surr: Toluene-d8	99.7	70-130		%REC	1	12/8/2015 11:07:53 PM	A30709
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/14/2015	22770

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B30690		RunNo: 30690							
Prep Date:	Analysis Date: 12/8/2015		SeqNo: 937145		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B30690		RunNo: 30690							
Prep Date:	Analysis Date: 12/8/2015		SeqNo: 937146		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.50	0.020	0.5000	0	101	85	115			
Barium	0.48	0.0020	0.5000	0	96.8	85	115			
Boron	0.49	0.040	0.5000	0	98.4	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.2	85	115			
Copper	0.48	0.0060	0.5000	0	95.8	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.4	85	115			
Nickel	0.48	0.010	0.5000	0	96.2	85	115			
Silver	0.098	0.0050	0.1000	0	97.8	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B30690		RunNo: 30690							
Prep Date:	Analysis Date: 12/8/2015		SeqNo: 937147		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	91.5	50	150			
Barium	0.0022	0.0020	0.002000	0	109	50	150			
Boron	ND	0.040	0.04000	0	99.4	50	150			
Cadmium	0.0022	0.0020	0.002000	0	109	50	150			
Cobalt	0.0072	0.0060	0.006000	0	120	50	150			
Copper	ND	0.0060	0.006000	0	95.5	50	150			
Iron	0.021	0.020	0.02000	0	104	50	150			
Manganese	0.0021	0.0020	0.002000	0	106	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B30690		RunNo: 30690					
Prep Date:			Analysis Date: 12/8/2015		SeqNo: 937147		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010	0.005000	0	149	50	150			
Silver	ND	0.0050	0.005000	0	94.2	50	150			

Sample ID	MB-B		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: B30821		RunNo: 30821					
Prep Date:			Analysis Date: 12/14/2015		SeqNo: 941747		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B30821		RunNo: 30821					
Prep Date:			Analysis Date: 12/14/2015		SeqNo: 941748		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.51	0.0060	0.5000	0	101	85	115			

Sample ID	LLLCS-B			SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC			Batch ID:	B30821		RunNo:	30821			
Prep Date:				Analysis Date:	12/14/2015		SeqNo:	941749		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chromium	0.0067	0.0060	0.006000	0	112	50	150				

Sample ID	MB-B		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945585		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	ND	0.0080								
Zinc	ND	0.010								

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945586		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.49	0.0080	0.5000	0	98.3	85	115			
Zinc	0.46	0.010	0.5000	0	92.3	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945587		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.0097	0.0080	0.008000	0	122	50	150			
Zinc	ND	0.010	0.005000	0	101	50	150			

Sample ID	1512236-001GMS		SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	R.O. Reject		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945614		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.49	0.0080	0.5000	0.006130	96.0	70	130			
Zinc	0.47	0.010	0.5000	0.01974	89.6	70	130			

Sample ID	1512236-001GMSD		SampType: MSD		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	R.O. Reject		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945615		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.50	0.0080	0.5000	0.006130	99.6	70	130	3.67	20	
Zinc	0.48	0.010	0.5000	0.01974	91.4	70	130	1.94	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	1512236-001GMSLL		SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	R.O. Reject		Batch ID:	B30746		RunNo:	30746				
Prep Date:			Analysis Date:	12/9/2015		SeqNo:	939236		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	0.013	0.00050	0.01250	0	104	70	130				
Selenium	0.030	0.0010	0.02500	0.005378	98.7	70	130				
Uranium	0.018	0.00050	0.01250	0.003210	115	70	130				

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B30746		RunNo: 30746					
Prep Date:			Analysis Date: 12/9/2015		SeqNo: 939237		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.024	0.0010	0.02500	0	96.0	85	115			
Uranium	0.012	0.00050	0.01250	0	98.1	85	115			

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B30746			RunNo: 30746					
Prep Date:		Analysis Date: 12/9/2015			SeqNo: 939238		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.9	50	150			
Selenium	ND	0.0010	0.001000	0	97.8	50	150			
Uranium	ND	0.00050	0.0005000	0	97.3	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B30746			RunNo: 30746					
Prep Date:		Analysis Date: 12/9/2015			SeqNo: 939239		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	1512236-001GMSLL			SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	R.O. Reject		Batch ID:	A30798		RunNo:	30798				
Prep Date:			Analysis Date:	12/11/2015		SeqNo:	941037		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.13	0.0050	0.1250	0.001076	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: A30798		RunNo: 30798					
Prep Date:			Analysis Date: 12/11/2015		SeqNo: 941051		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			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A30798		RunNo: 30798					
Prep Date:			Analysis Date: 12/11/2015		SeqNo: 941054		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	94.6	50	150			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	A30798		RunNo:	30798				
Prep Date:		Analysis Date:	12/11/2015		SeqNo:	941056	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-22710		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	22710		RunNo:	30788				
Prep Date:	12/9/2015		Analysis Date:	12/11/2015		SeqNo:	940469		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-22710			SampType:	LCS		TestCode:	EPA Method 245.1: Mercury				
Client ID:	LCSW			Batch ID:	22710		RunNo:	30788				
Prep Date:	12/9/2015			Analysis Date:	12/11/2015		SeqNo:	940470			Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Mercury	0.0051	0.00020	0.005000	0	102	80	120					

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A30652	RunNo:	30652					
Prep Date:		Analysis Date:	12/5/2015	SeqNo:	936397	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A30652	RunNo:	30652					
Prep Date:		Analysis Date:	12/5/2015	SeqNo:	936398	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			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R31049	RunNo:	31049					
Prep Date:		Analysis Date:	12/22/2015	SeqNo:	949718	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R31049	RunNo:	31049					
Prep Date:		Analysis Date:	12/22/2015	SeqNo:	949719	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	95.9	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	A31049	RunNo:	31049					
Prep Date:		Analysis Date:	12/23/2015	SeqNo:	949774	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	A31049	RunNo:	31049					
Prep Date:		Analysis Date:	12/23/2015	SeqNo:	949775	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	10	0.50	10.00	0	99.7	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-22664		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	22664		RunNo:	30705				
Prep Date:	12/8/2015		Analysis Date:	12/9/2015		SeqNo:	937923		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-22664		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 22664		RunNo: 30705					
Prep Date:	12/8/2015		Analysis Date: 12/9/2015		SeqNo: 937924		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-22645		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 22645		RunNo: 30655					
Prep Date:	12/7/2015		Analysis Date: 12/7/2015		SeqNo: 936459		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	0.98		1.000		98.3	72	136			

Sample ID	LCS-22645		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 22645		RunNo: 30655					
Prep Date:	12/7/2015		Analysis Date: 12/7/2015		SeqNo: 936460		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.9	1.0	5.000	0	97.6	52.4	154			
Surr: DNOP	0.44		0.5000		87.9	72	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: A30727		RunNo: 30727					
Prep Date:			Analysis Date: 12/9/2015		SeqNo: 938906		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		92.4	49.5	130			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: A30727			RunNo: 30727					
Prep Date:		Analysis Date: 12/9/2015			SeqNo: 938907		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	80	120			
Surr: BFB	23		20.00		113	49.5	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-22699		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 22699		RunNo: 30771					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 939925		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.0		2.500		78.4	17.7	151			
Surr: Tetrachloro-m-xylene	1.1		2.500		44.0	20.6	151			

Sample ID	LCS-22699		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 22699		RunNo: 30771					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 940026		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.0	1.0	5.000	0	39.4	9.01	142			
Aroclor 1260	3.0	1.0	5.000	0	59.3	25.6	164			
Surr: Decachlorobiphenyl	1.8		2.500		73.2	17.7	151			
Surr: Tetrachloro-m-xylene	1.1		2.500		43.2	20.6	151			

Sample ID	1512236-001DMS		SampType: MS		TestCode: EPA Method 8082: PCB's					
Client ID:	R.O. Reject		Batch ID: 22699		RunNo: 30771					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 940884		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.2	1.0	5.000	0	44.7	14.5	105			
Aroclor 1260	3.8	1.0	5.000	0	76.3	21.4	125			
Surr: Decachlorobiphenyl	2.1		2.500		84.0	17.7	151			
Surr: Tetrachloro-m-xylene	1.5		2.500		61.2	20.6	151			

Sample ID	1512236-001DMSD		SampType: MSD		TestCode: EPA Method 8082: PCB's					
Client ID:	R.O. Reject		Batch ID: 22699		RunNo: 30771					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 940885		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.1	1.0	5.000	0	41.4	14.5	105	7.72	20	
Aroclor 1260	3.4	1.0	5.000	0	68.9	21.4	125	10.2	27.6	
Surr: Decachlorobiphenyl	1.9		2.500		77.6	17.7	151	0	0	
Surr: Tetrachloro-m-xylene	1.4		2.500		55.6	20.6	151	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID: A30709				RunNo: 30709				
Prep Date:		Analysis Date: 12/8/2015				SeqNo: 937841	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID: A30709				RunNo: 30709				
Prep Date:		Analysis Date: 12/8/2015				SeqNo: 937841	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		103	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	100ng lcs	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW	Batch ID: A30709				RunNo: 30709				
Prep Date:		Analysis Date: 12/8/2015				SeqNo: 937842	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: A30709			RunNo: 30709					
Prep Date:		Analysis Date: 12/8/2015			SeqNo: 937842		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	22	1.0	20.00	0	110	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		106	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB-22700	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 22700		RunNo: 30775							
Prep Date: 12/9/2015	Analysis Date: 12/11/2015		SeqNo: 940029		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	13		20.00		63.6	33.4	129			

Sample ID LCS-22700	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 22700		RunNo: 30775							
Prep Date: 12/9/2015	Analysis Date: 12/11/2015		SeqNo: 940030		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	69	2.0	80.00	0	86.7	54.6	110			
1-Methylnaphthalene	69	2.0	80.20	0	86.6	49.1	116			
2-Methylnaphthalene	69	2.0	80.00	0	86.8	52.5	111			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	62	107			
Surr: Benzo(e)pyrene	13		20.00		66.6	33.4	129			

Sample ID 1512236-001DMS	SampType: MS		TestCode: EPA Method 8310: PAHs							
Client ID: R.O. Reject	Batch ID: 22700		RunNo: 30775							
Prep Date: 12/9/2015	Analysis Date: 12/11/2015		SeqNo: 940035		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	67	2.0	80.00	0	83.3	21.6	109			
1-Methylnaphthalene	69	2.0	80.20	0	85.5	15.8	102			
2-Methylnaphthalene	68	2.0	80.00	0	85.2	11.4	99			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	25	123			
Surr: Benzo(e)pyrene	14		20.00		68.2	33.4	129			

Sample ID 1512236-001DMSD	SampType: MSD		TestCode: EPA Method 8310: PAHs							
Client ID: R.O. Reject	Batch ID: 22700		RunNo: 30775							
Prep Date: 12/9/2015	Analysis Date: 12/11/2015		SeqNo: 940036		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	57	2.0	80.00	0	70.8	21.6	109	16.2	20	
1-Methylnaphthalene	58	2.0	80.20	0	72.2	15.8	102	16.9	20	
2-Methylnaphthalene	58	2.0	80.00	0	72.2	11.4	99	16.5	20	
Benzo(a)pyrene	0.39	0.070	0.5020	0	77.7	25	123	14.3	20	
Surr: Benzo(e)pyrene	12		20.00		57.8	33.4	129	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-22770		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	22770		RunNo:	30802				
Prep Date:	12/14/2015		Analysis Date:	12/14/2015		SeqNo:	941057		Units:		µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-22770		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	22770		RunNo:	30802				
Prep Date:	12/14/2015		Analysis Date:	12/14/2015		SeqNo:	941058		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	22	2.5	20.00	0	111	64.4	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R31007		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R31007		RunNo:	31007				
Prep Date:			Analysis Date:	12/9/2015		SeqNo:	948210		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R31007			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R31007		RunNo:	31007			
Prep Date:				Analysis Date:	12/9/2015		SeqNo:	948211		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.504		0.5000	0	101	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#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R31278		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R31278		RunNo: 31278					
Prep Date:			Analysis Date: 12/17/2016		SeqNo: 957749		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.341	0.735								
Radium-226 ±	0.446	0.735								
Radium-228	0.0606	0.609								
Radium-228 ±	0.268	0.609								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512236

06-Jan-16

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-22696		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 22696		RunNo: 30818					
Prep Date:	12/9/2015		Analysis Date: 12/13/2015		SeqNo: 941671		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-22696		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 22696		RunNo: 30818					
Prep Date:	12/9/2015		Analysis Date: 12/13/2015		SeqNo: 941672		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	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



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: NAVAJO REFINING CO

Work Order Number: 1512236

RcptNo: 1

Received by/date: JA 12/04/15

Logged By: Celina Sessa

12/4/2015 9:20:00 AM

Celina Sessa

Completed By: Celina Sessa

12/4/2015 2:30:37 PM

Celina Sessa

Reviewed By: AG

12/04/15

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?

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:

6 or 12 unless noted

Adjusted? No

Checked by: JA

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

Client: Navajo Refinery

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

Email or Fax#: 575-746-5451

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

☐ Other

☐ EDD (Type)

Sample Request ID

Date

Time

Matrix

Sample Request ID

Date

Time

Matrix

Sample Request ID

Date

Time

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Sample Request ID

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Matrix



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Sasberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	12/3/2015 @ 8:55 a.m.
End Date and Time	12/3/2015 @ 9:10 a.m.

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>
Parts / Sample Intervals One	

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>
Type of Sampler: Directly to sample jars	

☒ North Field R.O. Reject Discharge

☐ South Field R.O. Reject Discharge

Outfall / Sample Location:

Preservatives									
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3
1	500ml	Plastic	2	X			X		
2	40ml	VOA	3		X				
3	500ml	Plastic	1			X			
4	125ml	Plastic	1			X			
5	500ml	Plastic	2					X	
6	1L	Plastic	3			X			
7	40ml	VOA	2		X				
8	1L	Glass	1	X					
9	1L	Glass	2	X					
10	40ml	VOA	2	X					
11	40ml	VOA	2	X					
				Analysis and/or Method Requested					
				pH, Cl, F, S04, NO2/NO3, TDS					
				8015 GRO					
				6020 total metals, 7470 Hg					
				6020 Dissolved Metals					
				Cyanide					
				Radium 226/228					
				8260 see attached list					
				8270 see attached list					
				8082 PCBs					
				8015 DRO					
				Radium 226/228					

Field Data (Weather, Observations, Etc): 12/3/2015 Temp 35.6 °F, Humidity 70%, Wind Dir. North, Wind Speed 6.9 mph, Conditions Clear

Date and Time:

Field Temp. 62.5F Field pH 7.46

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

January 06, 2016

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary RO Reject

OrderNo.: 1512238

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512238

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary RO Reject

Collection Date: 12/3/2015 9:30:00 AM

Lab ID: 1512238-001

Matrix: AQUEOUS

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Arsenic	ND	0.0010		mg/L	1	12/11/2015 2:40:29 PM	A30798
Lead	ND	0.00050		mg/L	1	12/11/2015 2:40:29 PM	A30798
Selenium	ND	0.0010		mg/L	1	12/11/2015 2:40:29 PM	A30798
Uranium	ND	0.00050		mg/L	1	12/11/2015 2:40:29 PM	A30798
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.44	0.825		pCi/L	1	12/17/2016	R31278
Radium-226 ±	0.725	0.825		pCi/L	1	12/17/2016	R31278
Radium-228	0.534	0.587		pCi/L	1	12/17/2016	R31278
Radium-228 ±	0.304	0.587		pCi/L	1	12/17/2016	R31278
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.5	0.10		mg/L	1	12/5/2015 4:17:53 AM	A30652
Chloride	53	25		mg/L	50	12/23/2015 3:24:38 AM	A31049
Sulfate	1300	25		mg/L	50	12/23/2015 3:24:38 AM	A31049
Nitrate+Nitrite as N	1.7	1.0		mg/L	5	12/23/2015 3:49:28 AM	R31049
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: SRM
Total Dissolved Solids	2550	20.0	*	mg/L	1	12/13/2015 1:47:00 PM	22696
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	12/15/2015	R31009
SM4500-H+B: PH							Analyst: MRA
pH	7.92	1.68	H	pH units	1	12/7/2015 1:42:27 PM	R30658
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	12/14/2015 2:36:49 PM	B30821
Barium	ND	0.0020		mg/L	1	12/14/2015 2:36:49 PM	B30821
Boron	ND	0.040		mg/L	1	12/14/2015 2:36:49 PM	B30821
Cadmium	ND	0.0020		mg/L	1	12/16/2015 3:13:38 PM	B30889
Chromium	ND	0.0060		mg/L	1	12/14/2015 2:36:49 PM	B30821
Cobalt	ND	0.0060		mg/L	1	12/14/2015 2:36:49 PM	B30821
Copper	0.014	0.0060		mg/L	1	12/14/2015 2:36:49 PM	B30821
Iron	ND	0.020		mg/L	1	12/14/2015 2:36:49 PM	B30821
Manganese	ND	0.0020		mg/L	1	12/14/2015 2:36:49 PM	B30821
Molybdenum	ND	0.0080		mg/L	1	12/17/2015 2:24:13 PM	B30929
Nickel	ND	0.010		mg/L	1	12/16/2015 3:13:38 PM	B30889
Silver	ND	0.0050		mg/L	1	12/17/2015 2:24:13 PM	B30929
Zinc	0.021	0.010		mg/L	1	12/16/2015 3:13:38 PM	B30889
EPA METHOD 245.1: MERCURY							Analyst: DBD
Mercury	ND	0.00020		mg/L	1	12/11/2015 11:08:25 AM	22710

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512238

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary RO Reject

Collection Date: 12/3/2015 9:30:00 AM

Lab ID: 1512238-001

Matrix: AQUEOUS

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	12/9/2015	22664
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Aroclor 1221	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Aroclor 1232	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Aroclor 1242	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Aroclor 1248	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Aroclor 1254	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Aroclor 1260	ND	1.0		µg/L	1	12/11/2015 4:36:04 PM	22699
Surr: Decachlorobiphenyl	73.2	17.7-151		%REC	1	12/11/2015 4:36:04 PM	22699
Surr: Tetrachloro-m-xylene	53.2	20.6-151		%REC	1	12/11/2015 4:36:04 PM	22699
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/7/2015 2:27:15 PM	22645
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	12/7/2015 2:27:15 PM	22645
Surr: DNOP	92.8	72-136		%REC	1	12/7/2015 2:27:15 PM	22645
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/10/2015 1:17:04 AM	A30727
Surr: BFB	85.9	49.5-130		%REC	1	12/10/2015 1:17:04 AM	A30727
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	12/11/2015 8:41:32 AM	22700
1-Methylnaphthalene	ND	2.0		µg/L	1	12/11/2015 8:41:32 AM	22700
2-Methylnaphthalene	ND	2.0		µg/L	1	12/11/2015 8:41:32 AM	22700
Benzo(a)pyrene	ND	0.070		µg/L	1	12/11/2015 8:41:32 AM	22700
Surr: Benzo(e)pyrene	56.1	33.4-129		%REC	1	12/11/2015 8:41:32 AM	22700
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
Toluene	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
Ethylbenzene	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
Carbon Tetrachloride	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
Chloroform	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
1,1-Dichloroethane	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
1,1-Dichloroethene	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
Methylene Chloride	ND	3.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/10/2015 11:52:43 AM R30770	
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM R30770	

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512238

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary RO Reject

Collection Date: 12/3/2015 9:30:00 AM

Lab ID: 1512238-001

Matrix: AQUEOUS

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst: AG		
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM	R30770
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM	R30770
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM	R30770
Vinyl chloride	ND	1.0		µg/L	1	12/10/2015 11:52:43 AM	R30770
Xylenes, Total	ND	1.5		µg/L	1	12/10/2015 11:52:43 AM	R30770
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	12/10/2015 11:52:43 AM	R30770
Surr: 4-Bromofluorobenzene	93.4	70-130		%REC	1	12/10/2015 11:52:43 AM	R30770
Surr: Dibromofluoromethane	93.9	70-130		%REC	1	12/10/2015 11:52:43 AM	R30770
Surr: Toluene-d8	96.6	70-130		%REC	1	12/10/2015 11:52:43 AM	R30770
TOTAL PHENOLICS BY SW-846 9067					Analyst: SCC		
Phenolics, Total Recoverable	ND	2.5		µg/L	1	12/14/2015	22770

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512238

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary RO Reject

Collection Date:

Lab ID: 1512238-002

Matrix: TRIP BLANK

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	12/9/2015	22664
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Toluene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Ethylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Naphthalene	ND	2.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1-Methylnaphthalene	ND	4.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
2-Methylnaphthalene	ND	4.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Acetone	11	10		µg/L	1	12/10/2015 1:47:44 PM	R30770
Bromobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Bromodichloromethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Bromoform	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Bromomethane	ND	3.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
2-Butanone	ND	10		µg/L	1	12/10/2015 1:47:44 PM	R30770
Carbon disulfide	ND	10		µg/L	1	12/10/2015 1:47:44 PM	R30770
Carbon Tetrachloride	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Chlorobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Chloroethane	ND	2.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Chloroform	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Chloromethane	ND	3.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
2-Chlorotoluene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
4-Chlorotoluene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
cis-1,2-DCE	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Dibromochloromethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Dibromomethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1-Dichloroethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1-Dichloroethene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2-Dichloropropane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512238

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary RO Reject

Collection Date:

Lab ID: 1512238-002

Matrix: TRIP BLANK

Received Date: 12/4/2015 9:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,3-Dichloropropane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
2,2-Dichloropropane	ND	2.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1-Dichloropropene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Hexachlorobutadiene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
2-Hexanone	ND	10		µg/L	1	12/10/2015 1:47:44 PM	R30770
Isopropylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
4-Isopropyltoluene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
4-Methyl-2-pentanone	ND	10		µg/L	1	12/10/2015 1:47:44 PM	R30770
Methylene Chloride	ND	3.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
n-Butylbenzene	ND	3.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
n-Propylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
sec-Butylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Styrene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
tert-Butylbenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
trans-1,2-DCE	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Trichlorofluoromethane	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Vinyl chloride	ND	1.0		µg/L	1	12/10/2015 1:47:44 PM	R30770
Xylenes, Total	ND	1.5		µg/L	1	12/10/2015 1:47:44 PM	R30770
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	12/10/2015 1:47:44 PM	R30770
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	12/10/2015 1:47:44 PM	R30770
Surr: Dibromofluoromethane	104	70-130		%REC	1	12/10/2015 1:47:44 PM	R30770
Surr: Toluene-d8	110	70-130		%REC	1	12/10/2015 1:47:44 PM	R30770

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B30821		RunNo: 30821							
Prep Date:	Analysis Date: 12/14/2015		SeqNo: 941747		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Boron	ND	0.040								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B30821		RunNo: 30821							
Prep Date:	Analysis Date: 12/14/2015		SeqNo: 941748		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	103	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Copper	0.49	0.0060	0.5000	0	98.5	85	115			
Iron	0.53	0.020	0.5000	0	105	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			

Sample ID LLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B30821		RunNo: 30821							
Prep Date:	Analysis Date: 12/14/2015		SeqNo: 941749		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	104	50	150			
Boron	ND	0.040	0.04000	0	99.4	50	150			
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Cobalt	ND	0.0060	0.006000	0	70.0	50	150			
Copper	ND	0.0060	0.006000	0	91.2	50	150			
Iron	0.023	0.020	0.02000	0	114	50	150			
Manganese	0.0022	0.0020	0.002000	0	108	50	150			

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B30821		RunNo: 30821							
Prep Date:	Analysis Date: 12/14/2015		SeqNo: 941846		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID LCS-B	SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW	Batch ID: B30821			RunNo: 30821						
Prep Date:	Analysis Date: 12/14/2015			SeqNo: 941847		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			

Sample ID LLCS-B	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: BatchQC	Batch ID: B30821			RunNo: 30821						
Prep Date:	Analysis Date: 12/14/2015			SeqNo: 941848		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	93.0	50	150			

Sample ID MB-B	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: PBW	Batch ID: B30889			RunNo: 30889						
Prep Date:	Analysis Date: 12/16/2015			SeqNo: 944219		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW	Batch ID: B30889			RunNo: 30889						
Prep Date:	Analysis Date: 12/16/2015			SeqNo: 944220		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	98.9	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Zinc	0.48	0.010	0.5000	0	95.7	85	115			

Sample ID LLCS-B	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: BatchQC	Batch ID: B30889			RunNo: 30889						
Prep Date:	Analysis Date: 12/16/2015			SeqNo: 944221		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020	0.002000	0	78.5	50	150			
Nickel	ND	0.010	0.005000	0	78.8	50	150			
Zinc	ND	0.010	0.005000	0	67.0	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	1512238-001GMS		SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	Temporary R.O. Rej		Batch ID: B30889		RunNo: 30889					
Prep Date:			Analysis Date: 12/16/2015		SeqNo: 944261		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.53	0.0020	0.5000	0	106	70	130			
Nickel	0.50	0.010	0.5000	0	99.2	70	130			
Zinc	0.52	0.010	0.5000	0.02057	100	70	130			

Sample ID	1512238-001GMSD		SampType: MSD		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	Temporary R.O. Rej		Batch ID: B30889		RunNo: 30889					
Prep Date:			Analysis Date: 12/16/2015		SeqNo: 944265		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	70	130	3.15	20	
Nickel	0.48	0.010	0.5000	0	95.3	70	130	4.04	20	
Zinc	0.50	0.010	0.5000	0.02057	96.7	70	130	3.48	20	

Sample ID	MB-B		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID:	B30929		RunNo:	30929				
Prep Date:			Analysis Date:	12/17/2015		SeqNo:	945585		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Molybdenum	ND	0.0080									
Silver	ND	0.0050									

Sample ID	LCS-B		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945586		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.49	0.0080	0.5000	0	98.3	85	115			
Silver	0.098	0.0050	0.1000	0	98.0	85	115			

Sample ID	LLLCS-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B30929		RunNo: 30929					
Prep Date:			Analysis Date: 12/17/2015		SeqNo: 945587		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.0097	0.0080	0.008000	0	122	50	150			
Silver	0.0051	0.0050	0.005000	0	103	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	1512238-001GMS	SampType:	MS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	Temporary R.O. Rej	Batch ID:	B30929	RunNo:	30929					
Prep Date:		Analysis Date:	12/17/2015	SeqNo:	945617	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.49	0.0080	0.5000	0.003550	97.6	70	130			
Silver	0.10	0.0050	0.1000	0	103	70	130			

Sample ID	1512238-001GMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	Temporary R.O. Rej	Batch ID:	B30929	RunNo:	30929					
Prep Date:		Analysis Date:	12/17/2015	SeqNo:	945621	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.49	0.0080	0.5000	0.003550	97.9	70	130	0.380	20	
Silver	0.11	0.0050	0.1000	0	105	70	130	2.48	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: A30798			RunNo: 30798						
Prep Date:	Analysis Date: 12/11/2015			SeqNo: 941051		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	97.2	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: A30798			RunNo: 30798						
Prep Date:	Analysis Date: 12/11/2015			SeqNo: 941054		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	94.6	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	ND	0.0010	0.001000	0	90.5	50	150			
Uranium	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: A30798			RunNo: 30798						
Prep Date:	Analysis Date: 12/11/2015			SeqNo: 941056		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22710		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	22710		RunNo:	30788				
Prep Date:	12/9/2015		Analysis Date:	12/11/2015		SeqNo:	940469		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-22710		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 22710		RunNo: 30788					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 940470		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A30652		RunNo: 30652							
Prep Date:	Analysis Date: 12/5/2015		SeqNo: 936397		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A30652		RunNo: 30652							
Prep Date:	Analysis Date: 12/5/2015		SeqNo: 936398		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			

Sample ID 1512238-001EMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: Temporary R.O. Rej	Batch ID: A30652		RunNo: 30652							
Prep Date:	Analysis Date: 12/5/2015		SeqNo: 936404		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.9	0.10	0.5000	2.456	82.0	75.3	111			

Sample ID 1512238-001EMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: Temporary R.O. Rej	Batch ID: A30652		RunNo: 30652							
Prep Date:	Analysis Date: 12/5/2015		SeqNo: 936405		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.8	0.10	0.5000	2.456	77.0	75.3	111	0.876	20	

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R31049		RunNo: 31049							
Prep Date:	Analysis Date: 12/22/2015		SeqNo: 949718		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R31049		RunNo: 31049							
Prep Date:	Analysis Date: 12/22/2015		SeqNo: 949719		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	95.9	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A31049		RunNo: 31049							
Prep Date:	Analysis Date: 12/23/2015		SeqNo: 949774		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A31049		RunNo: 31049							
Prep Date:	Analysis Date: 12/23/2015		SeqNo: 949775		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	10	0.50	10.00	0	99.7	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22664		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	22664		RunNo:	30705				
Prep Date:	12/8/2015		Analysis Date:	12/9/2015		SeqNo:	937923		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-22664		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 22664		RunNo: 30705					
Prep Date:	12/8/2015		Analysis Date: 12/9/2015		SeqNo: 937924		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22645		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 22645		RunNo: 30655					
Prep Date:	12/7/2015		Analysis Date: 12/7/2015		SeqNo: 936459		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	0.98		1.000		98.3	72	136			

Sample ID	LCS-22645		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 22645		RunNo: 30655					
Prep Date:	12/7/2015		Analysis Date: 12/7/2015		SeqNo: 936460		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.9	1.0	5.000	0	97.6	52.4	154			
Surr: DNOP	0.44		0.5000		87.9	72	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: A30727		RunNo: 30727							
Prep Date:	Analysis Date: 12/9/2015		SeqNo: 938906		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		92.4	49.5	130			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: A30727		RunNo: 30727							
Prep Date:	Analysis Date: 12/9/2015		SeqNo: 938907		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	80	120			
Surr: BFB	23		20.00		113	49.5	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22699		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 22699		RunNo: 30771					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 939925		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.0		2.500		78.4	17.7	151			
Surr: Tetrachloro-m-xylene	1.1		2.500		44.0	20.6	151			

Sample ID	LCS-22699		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 22699		RunNo: 30771					
Prep Date:	12/9/2015		Analysis Date: 12/11/2015		SeqNo: 940026		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.0	1.0	5.000	0	39.4	9.01	142			
Aroclor 1260	3.0	1.0	5.000	0	59.3	25.6	164			
Surr: Decachlorobiphenyl	1.8		2.500		73.2	17.7	151			
Surr: Tetrachloro-m-xylene	1.1		2.500		43.2	20.6	151			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R30770			RunNo: 30770						
Prep Date:	Analysis Date: 12/10/2015			SeqNo: 939923		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.6	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	93.0	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.6	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.7	70	130			
Surr: Toluene-d8	9.6		10.00		96.2	70	130			

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R30770			RunNo: 30770						
Prep Date:	Analysis Date: 12/10/2015			SeqNo: 939927		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample 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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R30770			RunNo: 30770					
Prep Date:		Analysis Date: 12/10/2015			SeqNo: 939927	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R30770		RunNo: 30770							
Prep Date:	Analysis Date: 12/10/2015		SeqNo: 939927		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.4	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.2	70	130			
Surr: Dibromofluoromethane	8.7		10.00		87.5	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID 1512238-001ams	SampType: MS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: Temporary R.O. Rej	Batch ID: R30770		RunNo: 30770							
Prep Date:	Analysis Date: 12/10/2015		SeqNo: 939930		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	83.3	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	19	1.0	20.00	0	96.8	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	87.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.8	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID 1512238-001amsd	SampType: MSD		TestCode: EPA Method 8260B: VOLATILES							
Client ID: Temporary R.O. Rej	Batch ID: R30770		RunNo: 30770							
Prep Date:	Analysis Date: 12/10/2015		SeqNo: 939931		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.2	70	130	10.2	20	
Toluene	23	1.0	20.00	0	114	70	130	7.19	20	
Chlorobenzene	19	1.0	20.00	0	93.0	70	130	4.00	20	
1,1-Dichloroethene	17	1.0	20.00	0	82.9	70	130	14.2	20	
Trichloroethene (TCE)	19	1.0	20.00	0	94.0	70	130	6.87	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.0		10.00		89.9	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		102	70	130	0	0	
Surr: Toluene-d8	12		10.00		117	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R30770	RunNo:	30770					
Prep Date:		Analysis Date:	12/10/2015	SeqNo:	939958	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.0	70	130			
Toluene	23	1.0	20.00	0	113	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	83.9	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	97.5	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		114	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22700		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	22700		RunNo:	30775			
Prep Date:	12/9/2015		Analysis Date:	12/11/2015		SeqNo:	940029	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	13		20.00		63.6	33.4	129			

Sample ID	LCS-22700		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	22700		RunNo:	30775			
Prep Date:	12/9/2015		Analysis Date:	12/11/2015		SeqNo:	940030	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	69	2.0	80.00	0	86.7	54.6	110			
1-Methylnaphthalene	69	2.0	80.20	0	86.6	49.1	116			
2-Methylnaphthalene	69	2.0	80.00	0	86.8	52.5	111			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	62	107			
Surr: Benzo(e)pyrene	13		20.00		66.6	33.4	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22770		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 22770		RunNo: 30802					
Prep Date:	12/14/2015		Analysis Date: 12/14/2015		SeqNo: 941057		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-22770		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 22770		RunNo: 30802					
Prep Date:	12/14/2015		Analysis Date: 12/14/2015		SeqNo: 941058		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	111	64.4	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R31009		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R31009		RunNo:	31009				
Prep Date:			Analysis Date:	12/15/2015		SeqNo:	948228		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R31009		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R31009		RunNo: 31009					
Prep Date:			Analysis Date: 12/15/2015		SeqNo: 948229		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.514		0.5000	0	103	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#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R31278		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R31278		RunNo:	31278			
Prep Date:			Analysis Date:	12/17/2016		SeqNo:	957749		Units:	pCi/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.341	0.735								
Radium-226 ±	0.446	0.735								
Radium-228	0.0606	0.609								
Radium-228 ±	0.268	0.609								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512238

06-Jan-16

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-22696		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 22696		RunNo: 30818					
Prep Date:	12/9/2015		Analysis Date: 12/13/2015		SeqNo: 941671		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-22696		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 22696		RunNo: 30818					
Prep Date:	12/9/2015		Analysis Date: 12/13/2015		SeqNo: 941672		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	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



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: NAVAJO REFINING CO

Work Order Number: 1512238

RcptNo: 1

Received by/date:

JA

12/04/15

Logged By: Celina Sessa

12/4/2015 9:20:00 AM

Celina Sessa

Completed By: Celina Sessa

12/4/2015 3:08:09 PM

Celina Sessa

Reviewed By:

[Signature]

12/07/15

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:

8
(<2 or >12 unless noted)

Adjusted? *No*

Checked by: *JA*

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	1.3	Good	Yes			

1111-1111-1111

☒ Standard ☐ Rush

NM 88211-0159

email or Fax#: 575-746-5451

☒ X Standard

☐ EDD (Type)☐ EDD (Type)

Container Type and #	Preservative Type
----------------------	-------------------

2 - 500ml P
H₂SO₄

3-40ml	VOA	HCL
--------	-----	-----

1-3000111 F	HINO3
-------------	-------

4.500 mol D	NaOH
-------------	---------------

2-1L P	HNO3
--------	------

3-40ml VOA	Na2S2O3
------------	---------

3-40ml VOA	HCl
------------	-----

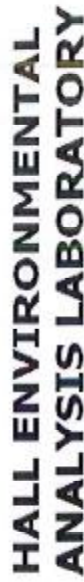
1-250ml Glass unpres

2-40ml VOA	HCL
------------	-----

Bill Clark

Received by:

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.



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

email or Fax#: 575-746-5451				Project Manager:		
QA/QC Package:				Robert Combs		
<input checked="" type="checkbox"/> Level 4 (Full Validation)				Sampler: Elizabeth Salsberry		
<input type="checkbox"/> Standard				On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> Other				Sample Temperature: 1.0		
<input type="checkbox"/> EDD (Type)				HEAL No. 1512238		
Date		Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
12/3/15	9:30	liquid	Temporary R.O. Reject	2 - 500ml P	1-unpres H2SO4	
12/3/15	9:30	liquid	Temporary R.O. Reject	3-40ml VOA	HCL	
12/3/15	9:30	liquid	Temporary R.O. Reject	1-500ml P	HNO3	
12/3/15	9:30	liquid	Temporary R.O. Reject	1-125ml P	HNO3	
12/3/15	9:30	liquid	Temporary R.O. Reject	1-500ml P	NaOH	
12/3/15	9:30	liquid	Temporary R.O. Reject	2- 1L P	HNO3	
12/3/15	9:30	liquid	Temporary R.O. Reject	3-40ml VOA	Na2S2O3	
12/3/15	9:30	liquid	Temporary R.O. Reject	2 - 1L Glass	unpres	
12/3/15	9:30	liquid	Temporary R.O. Reject	1 - 1L Glass	unpres	
12/3/15	9:30	liquid	Temporary R.O. Reject	3-40ml VOA	HCl	
12/3/15	9:30	liquid	Temporary R.O. Reject	1-250ml Glass	unpres	
12/3/15	9:30	liquid	Temporary R.O. Reject	1 - 1L Glass	H2SO4	
12/3/15	9:30	liquid	Temporary R.O. Reject	2-40ml VOA	HCl	

8260B: WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate Chloride	Phenols	Fluoride	Nitrate/Nitrite	Total Dissolved Solids	PH	504.1:EDB	Y
X				X				X		X	X	X	X		
X				X											
		X													
			X												
				X											
							X							X	

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
 VOCs: 1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Dichloroethylenes; 1,1,2-Trichloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dichloroethane; 1,2-Trichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
 SVOCs: benzotriazole, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly Temporary RO Reject Sample Details



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	12/3/2015 @ 9:20 a.m.
End Date and Time	12/3/2015 @ 9:35 a.m.

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Parts / Sample Intervals	One
--------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location:	<input checked="" type="checkbox"/> North Field R.O. Reject Discharge <input type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Neat (None)	Preservatives							Analysis and/or Method Requested
					HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	
1	500ml	Plastic	2	X			X				pH, Cl, F, S04, NO2/NO3, TDS	
2	40ml	VOA	3		X						8015 GRO	
3	500ml	Plastic	1			X					6020 total metals, 7470 Hg	
4	125ml	Plastic	1			X					6020 Dissolved Metals	
5	500ml	Plastic	2						X		Cyanide	
6	1L	Plastic	3			X					Radium 226/228	
7	40ml	VOA	2								8260 see attached list	
8	1L	Glass	1	X		X					8270 see attached list	
9	1L	Glass	2	X							8082 PCBs	
10	40ml	VOA	2	X							8015 DRO	
11	40ml	VOA	2		X						Radium 226/228	

Field Data (Weather, Observations, Etc):	12/3/2015 Tmp 39.2 °F, Humidity 61%, Wind Dir. NNE, Wind Speed 3.5 mph, Conditions Clear
Date and Time:	

Field Temp. 66.3F Field pH 7.56

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, January 15, 2016 2:49 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert; Denton, Scott
Subject: ACO Civil Penalty Payment for November 2015
Attachments: 160114 RO Reject ACO - Civil Penalty Payment Letter.pdf

Jim & Carl,

Attached is a copy of the Civil Penalty Payment for November concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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January 14, 2016

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

FEDEX

Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
November 2015 ACO – Civil Penalty Payment
HollyFrontier Navajo LLC
Artesia Refinery

Dear Director:

Enclosed please find a check in the amount of \$2,900 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for November 2015 submitted electronically on December 15, 2015. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
 HFC: Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
 160114 RO Reject ACO – Civil Penalty Payment

HollyFrontier Navajo Refining LLC
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 01/15/2016
Check Amount \$ 2,900.00
Vendor No 5126527
Payment Document 2000003857
Company Code 1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
01/14/2016	011416	REIMBURSING ASSETNATION	2,900.00	0.00	2,900.00

Payment document	Check number	Date	Currency	Payment amount
2000003857	011416	01/15/2016	USD	*****2,900.00*

PLEASE FOLD ON PERFORATION AND DETACH HERE

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT.

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

HollyFrontier Navajo Refining LLC
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611 1000318026
01/15/2016

PAY EXACTLY

*****2,900.00*USD

VOID AFTER 180 DAYS

PAY *** TWO THOUSAND NINE HUNDRED and 00 /100 USD***

TO THE
ORDER OF STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225
Bank of America N.A.

Stephen D Wise
AUTHORIZED SIGNATURE

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, November 17, 2015 8:52 AM
To: 'Denton, Scott'; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert
Subject: RE: ACO Monthly Report for October 2015

Mr. Denton:

The New Mexico Oil Conservation Division has reviewed the report and approves the penalty amount of \$2,800.

Please contact me if you have questions. Thank you.

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

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

From: Denton, Scott [mailto:Scott.Denton@HollyFrontier.com]
Sent: Friday, November 13, 2015 9:36 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Cc: Marks, Allison, EMNRD <AllisonR.Marks@state.nm.us>; Brancard, Bill, EMNRD <bill.brancard@state.nm.us>; McWatters, Denise <Denise.McWatters@HollyFrontier.com>; O'Brien, Robert (Bob) K. <Robert.O'Brien@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>
Subject: ACO Monthly Report for October 2015

Jim & Carl,

Attached is the monthly report for October concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies

P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, November 13, 2015 9:36 AM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Combs, Robert; Denton, Scott
Subject: ACO Monthly Report for October 2015
Attachments: 151113 ACO Monthly Report for October 2015.pdf

Jim & Carl,

Attached is the monthly report for October concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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November 13, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – October 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's November 2015 monthly report, for the period of October 1-31, under the Order.

Specifically, this report covers the October 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire October reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from October 1 through October 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from October 1 through October 31.

Navajo has calculated a penalty of \$2,800 for October 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 28 days in October. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on October 7, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Navajo is currently preparing a permit modification request to Discharge Permit GW-028 for installation of a third permanent primary RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced.

Navajo is also evaluating options for the underground injection of RO reject fluid.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
10/1/2015	125	102	227	7,783	75	2570	10,353
10/2/2015	114	103	217	7,440	118	4060	11,500
10/3/2015	112	59	171	5,863	89	3041	8,904
10/4/2015	146	136	282	9,669	67	2287	11,956
10/5/2015	151	136	287	9,840	0	0	9,840
10/6/2015	154	126	280	9,600	72	2484	12,084
10/7/2015	157	121	278	9,531	46	1589	11,120
10/8/2015	158	131	289	9,909	0	7	9,916
10/9/2015	159	133	292	10,011	8	290	10,301
10/10/2015	155	128	283	9,703	10	353	10,056
10/11/2015	149	122	271	9,291	21	722	10,013
10/12/2015	153	114	267	9,154	55	1881	11,035
10/13/2015	154	125	279	9,566	53	1800	11,366
10/14/2015	153	108	261	8,949	53	1810	10,759
10/15/2015	159	128	287	9,840	57	1971	11,811
10/16/2015	162	136	298	10,217	58	1989	12,206
10/17/2015	153	124	277	9,497	56	1930	11,427
10/18/2015	158	128	286	9,806	48	1646	11,452
10/19/2015	157	122	279	9,566	60	2064	11,630
10/20/2015	158	124	282	9,669	61	2081	11,750
10/21/2015	156	123	279	9,566	63	2149	11,715
10/22/2015	155	115	270	9,257	56	1919	11,176
10/23/2015	156	117	273	9,360	57	1951	11,311
10/24/2015	155	117	272	9,326	58	2004	11,330
10/25/2015	156	122	278	9,531	60	2045	11,576
10/26/2015	160	127	287	9,840	61	2081	11,921
10/27/2015	158	138	296	10,149	62	2111	12,260
10/28/2015	160	126	286	9,806	48	1646	11,452
10/29/2015	141	148	289	9,909	49	1680	11,589
10/30/2015	147	146	293	10,046	51	1745	11,791
10/31/2015	148	141	289	9,909	51	1759	11,668

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - November 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	28	\$2,800
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$2,800

Attachment 3
Analytical Lab Report



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

November 02, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1510410

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/8/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1510410**

Date Reported: **11/2/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 10/7/2015 9:35:00 AM

Lab ID: 1510410-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	10/20/2015 6:34:09 PM	B29683
Lead	ND	0.00050		mg/L	1	10/20/2015 3:59:03 PM	B29683
Selenium	0.0066	0.0010		mg/L	1	10/20/2015 3:59:03 PM	B29683
Uranium	0.0050	0.00050		mg/L	1	10/20/2015 3:59:03 PM	B29683
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.991	0.658		pCi/L	1	10/21/2015	R29838
Radium-226 ±	0.6	0.658		pCi/L	1	10/21/2015	R29838
Radium-228	0.579	0.666		pCi/L	1	10/21/2015	R29838
Radium-228 ±	0.357	0.666		pCi/L	1	10/21/2015	R29838
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.3	2.0		mg/L	20	10/8/2015 9:28:28 PM	R29414
Chloride	270	10		mg/L	20	10/8/2015 9:28:28 PM	R29414
Sulfate	1600	25		mg/L	50	10/20/2015 1:03:49 AM	R29666
Nitrate+Nitrite as N	1.4	1.0		mg/L	5	10/20/2015 1:28:39 AM	R29666
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3290	20.0	*	mg/L	1	10/12/2015 3:12:00 PM	21779
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	10/20/2015	R29838
SM4500-H+B: PH							Analyst: MRA
pH	7.79	1.68	H	pH units	1	10/9/2015 2:16:27 PM	R29457
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	10/15/2015 5:30:04 PM	C29574
Barium	0.054	0.0020		mg/L	1	10/13/2015 9:14:53 PM	B29512
Boron	0.10	0.040		mg/L	1	10/13/2015 9:14:53 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 9:14:53 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 9:14:53 PM	B29512
Cobalt	ND	0.0060		mg/L	1	10/13/2015 9:14:53 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 9:14:53 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 8:21:34 PM	C29542
Manganese	ND	0.0020		mg/L	1	10/13/2015 9:14:53 PM	B29512
Molybdenum	ND	0.0080		mg/L	1	10/13/2015 9:14:53 PM	B29512
Nickel	ND	0.010		mg/L	1	10/13/2015 9:14:53 PM	B29512
Silver	ND	0.0050		mg/L	1	10/13/2015 9:14:53 PM	B29512
Zinc	0.020	0.010		mg/L	1	10/30/2015 2:13:20 PM	A29914
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/15/2015 12:43:15 PM	21848

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1510410**

Date Reported: **11/2/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 10/7/2015 9:35:00 AM

Lab ID: 1510410-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/15/2015 3:18:03 PM	21803
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1221	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1232	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1242	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1248	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1254	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1260	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Surr: Decachlorobiphenyl	78.0	17.7-151		%REC	1	10/15/2015 1:42:00 AM	21811
Surr: Tetrachloro-m-xylene	74.4	20.6-151		%REC	1	10/15/2015 1:42:00 AM	21811
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/12/2015 4:51:13 PM	21793
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/12/2015 4:51:13 PM	21793
Surr: DNOP	127	72-136		%REC	1	10/12/2015 4:51:13 PM	21793
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/9/2015 3:46:02 PM	R29422
Surr: BFB	89.3	57.8-137		%REC	1	10/9/2015 3:46:02 PM	R29422
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	10/14/2015 4:04:15 PM	21812
1-Methylnaphthalene	ND	2.0		µg/L	1	10/14/2015 4:04:15 PM	21812
2-Methylnaphthalene	ND	2.0		µg/L	1	10/14/2015 4:04:15 PM	21812
Benzo(a)pyrene	ND	0.070		µg/L	1	10/14/2015 4:04:15 PM	21812
Surr: Benzo(e)pyrene	88.6	37.2-136		%REC	1	10/14/2015 4:04:15 PM	21812
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Toluene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Ethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Carbon Tetrachloride	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Chloroform	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1-Dichloroethane	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1-Dichloroethene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Methylene Chloride	ND	3.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1510410**

Date Reported: **11/2/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 10/7/2015 9:35:00 AM

Lab ID: 1510410-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: AG	
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Vinyl chloride	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Xylenes, Total	ND	1.5		µg/L	1	10/8/2015 6:03:57 PM	R29397
Surr: 1,2-Dichloroethane-d4	88.5	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
Surr: Dibromofluoromethane	96.9	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
Surr: Toluene-d8	103	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	10/20/2015	21920

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1510410-002

Matrix: TRIP BLANK

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/15/2015 3:32:00 PM	21803
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Toluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Ethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Naphthalene	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1-Methylnaphthalene	ND	4.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Methylnaphthalene	ND	4.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Acetone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromodichloromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromoform	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromomethane	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Butanone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Carbon disulfide	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Carbon Tetrachloride	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chloroethane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chloroform	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chloromethane	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Chlorotoluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
4-Chlorotoluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
cis-1,2-DCE	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Dibromochloromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Dibromomethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1-Dichloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1-Dichloroethene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dichloropropane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1510410-002

Matrix: TRIP BLANK

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,3-Dichloropropane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2,2-Dichloropropane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Hexachlorobutadiene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Hexanone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Isopropylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
4-Isopropyltoluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
4-Methyl-2-pentanone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Methylene Chloride	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
n-Butylbenzene	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
n-Propylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
sec-Butylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Styrene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
tert-Butylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
trans-1,2-DCE	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Trichlorofluoromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Vinyl chloride	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Xylenes, Total	ND	1.5		µg/L	1	10/8/2015 6:32:41 PM	R29397
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397
Surr: Dibromofluoromethane	96.7	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397
Surr: Toluene-d8	102	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: B29512			RunNo: 29512					
Prep Date:		Analysis Date: 10/13/2015			SeqNo: 897649		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B29512		RunNo: 29512					
Prep Date:			Analysis Date: 10/13/2015		SeqNo: 897650		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	103	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.7	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.3	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	94.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B29512			RunNo: 29512					
Prep Date:		Analysis Date: 10/13/2015			SeqNo: 897651		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	91.0	50	150			
Boron	ND	0.040	0.04000	0	98.5	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Chromium	0.0077	0.0060	0.006000	0	128	50	150			
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Copper	0.0087	0.0060	0.006000	0	144	50	150			
Manganese	0.0023	0.0020	0.002000	0	116	50	150			
Molybdenum	0.014	0.0080	0.008000	0	178	50	150			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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B29512			RunNo: 29512					
Prep Date:		Analysis Date: 10/13/2015			SeqNo: 897651		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010	0.005000	0	100	50	150			
Silver	ND	0.0050	0.005000	0	87.6	50	150			

Sample ID	MB-C		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: C29542		RunNo: 29542					
Prep Date:			Analysis Date: 10/14/2015		SeqNo: 898765		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	LCS-C		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: C29542		RunNo: 29542					
Prep Date:			Analysis Date: 10/14/2015		SeqNo: 898766		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.8	85	115			

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C29542		RunNo: 29542					
Prep Date:			Analysis Date: 10/14/2015		SeqNo: 898767		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	97.4	50	150			

Sample ID	MB-C		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: C29574		RunNo: 29574					
Prep Date:			Analysis Date: 10/15/2015		SeqNo: 900085		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID	LCS-C		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: C29574		RunNo: 29574					
Prep Date:			Analysis Date: 10/15/2015		SeqNo: 900086		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.51	0.020	0.5000	0	103	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: C29574		RunNo: 29574					
Prep Date:			Analysis Date: 10/15/2015		SeqNo: 900087		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	102	50	150			

Sample ID	MB-A		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: A29914		RunNo: 29914					
Prep Date:			Analysis Date: 10/30/2015		SeqNo: 911188		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID	LCS-A		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A29914		RunNo: 29914					
Prep Date:			Analysis Date: 10/30/2015		SeqNo: 911189		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID	LLLCS-A		SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID:	A29914		RunNo:	29914				
Prep Date:			Analysis Date:	10/30/2015		SeqNo:	911190		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Zinc	ND	0.010	0.005000	0	70.2	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B29683		RunNo: 29683					
Prep Date:			Analysis Date: 10/20/2015		SeqNo: 903929		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.2	85	115			
Lead	0.012	0.00050	0.01250	0	98.6	85	115			
Selenium	0.023	0.0010	0.02500	0	90.5	85	115			
Uranium	0.012	0.00050	0.01250	0	96.7	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B29683		RunNo: 29683					
Prep Date:			Analysis Date: 10/20/2015		SeqNo: 903932		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	96.3	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	ND	0.0010	0.001000	0	88.7	50	150			
Uranium	ND	0.00050	0.0005000	0	99.8	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B29683			RunNo: 29683					
Prep Date:		Analysis Date: 10/20/2015			SeqNo: 903934		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21848		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	21848		RunNo:	29565				
Prep Date:	10/14/2015		Analysis Date:	10/15/2015		SeqNo:	899831		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-21848		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 21848		RunNo: 29565					
Prep Date:	10/14/2015		Analysis Date: 10/15/2015		SeqNo: 899832		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29414	RunNo:	29414					
Prep Date:		Analysis Date:	10/8/2015	SeqNo:	894692	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:	R29414	RunNo:	29414					
Prep Date:		Analysis Date:	10/8/2015	SeqNo:	894693	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	4.8	0.50	5.000	0	96.4	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29666	RunNo:	29666					
Prep Date:		Analysis Date:	10/19/2015	SeqNo:	903381	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R29666	RunNo:	29666					
Prep Date:		Analysis Date:	10/19/2015	SeqNo:	903382	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.1	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21803		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	21803		RunNo:	29577				
Prep Date:	10/12/2015		Analysis Date:	10/15/2015		SeqNo:	900397		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-21803		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 21803		RunNo: 29577					
Prep Date:	10/12/2015		Analysis Date: 10/15/2015		SeqNo: 900399		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21793		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 21793		RunNo: 29489					
Prep Date:	10/12/2015		Analysis Date: 10/12/2015		SeqNo: 896837		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	1.3		1.000		128	72	136			

Sample ID	LCS-21793		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 21793		RunNo: 29489					
Prep Date:	10/12/2015		Analysis Date: 10/12/2015		SeqNo: 896840		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	107	52.4	154			
Surr: DNOP	0.55		0.5000		110	72	136			

Sample ID	1510410-001BMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject		Batch ID: 21793		RunNo: 29489					
Prep Date:	10/12/2015		Analysis Date: 10/12/2015		SeqNo: 896858		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	41.3	177			
Surr: DNOP	0.57		0.5000		113	72	136			

Sample ID	1510410-001BMSD			SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range			
Client ID:	R.O. Reject			Batch ID:	21793		RunNo:	29489			
Prep Date:	10/12/2015			Analysis Date:	10/12/2015		SeqNo:	896861		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	-94.6	317	4.71	22.1		
Surr: DNOP	0.59		0.5000		117	72	136	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895544	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		88.1	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895545	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	93.6	80	120			
Surr: BFB	19		20.00		93.0	57.8	137			

Sample ID	1510410-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895547	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	70	130			
Surr: BFB	19		20.00		95.6	57.8	137			

Sample ID	1510410-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895548	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	92.6	70	130	0.433	20	
Surr: BFB	19		20.00		96.6	57.8	137	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21811		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 21811		RunNo: 29529					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 899307		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		85.2	17.7	151			
Surr: Tetrachloro-m-xylene	2.1		2.500		82.8	20.6	151			

Sample ID	LCS-21811		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 21811		RunNo: 29529					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 899308		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	58.9	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	83.5	25.6	164			
Surr: Decachlorobiphenyl	1.8		2.500		74.0	17.7	151			
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	20.6	151			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R29397			RunNo: 29397					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894163		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	113	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R29397			RunNo: 29397					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894164		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R29397	RunNo:	29397					
Prep Date:		Analysis Date:	10/8/2015	SeqNo:	894164	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R29397	RunNo:	29397					
Prep Date:		Analysis Date:	10/8/2015	SeqNo:	894164	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.4	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21812		SampType: MBLK		TestCode: EPA Method 8310: PAHs					
Client ID:	PBW		Batch ID: 21812		RunNo: 29527					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 898372		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	21		20.00		103	37.2	136			

Sample ID	LCS-21812		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 21812		RunNo: 29527					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 898374		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	65	2.0	80.00	0	80.7	57.8	83.9			
1-Methylnaphthalene	67	2.0	80.20	0	83.1	43.5	88.5			
2-Methylnaphthalene	65	2.0	80.00	0	81.0	34.2	94.5			
Benzo(a)pyrene	0.41	0.070	0.5020	0	81.7	56.3	98.6			
Surr: Benzo(e)pyrene	21		20.00		107	37.2	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21920		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 21920		RunNo: 29663					
Prep Date:	10/20/2015		Analysis Date: 10/20/2015		SeqNo: 903297		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-21920		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 21920		RunNo: 29663					
Prep Date:	10/20/2015		Analysis Date: 10/20/2015		SeqNo: 903298		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	19	2.5	20.00	0	96.2	64.4	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R29838		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R29838		RunNo:	29838				
Prep Date:			Analysis Date:	10/20/2015		SeqNo:	908961		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R29838		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R29838		RunNo: 29838					
Prep Date:			Analysis Date: 10/20/2015		SeqNo: 908962		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.451		0.5000	0	90.2	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#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R29838		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R29838		RunNo: 29838					
Prep Date:			Analysis Date: 10/21/2015		SeqNo: 908965		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.209	0.513								
Radium-226 ±	0.319	0.513								
Radium-228	0.221	0.666								
Radium-228 ±	0.31	0.666								

Sample ID	MB-R29838	SampType: MBLK			TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID: R29838			RunNo: 29838					
Prep Date:		Analysis Date: 10/21/2015			SeqNo: 908967		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.411	0.965								
Radium-226 ±	0.571	0.965								
Radium-228	0.403	0.785								
Radium-228 ±	0.384	0.785								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21779		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 21779		RunNo: 29476					
Prep Date:	10/11/2015		Analysis Date: 10/12/2015		SeqNo: 896502		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21779		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21779		RunNo: 29476					
Prep Date:	10/11/2015		Analysis Date: 10/12/2015		SeqNo: 896503		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	999	20.0	1000	0	99.9	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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1510410

RcptNo: 1

Received by/date:	<i>CS</i>	<i>10/08/15</i>
Logged By:	Lindsay Mangin	10/8/2015 9:07:00 AM
Completed By:	Lindsay Mangin	10/8/2015 12:40:53 PM
Reviewed By:	<i>CS</i>	<i>10/08/15</i>

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☒ No ☐ Not Present ☒
 Yes ☒ No ☐ Not Present ☐
 Courier

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?
10. VOA vials have zero headspace?
11. Were any sample containers received broken?
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody?
14. Is it clear what analyses were requested?
15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒ No ☐ NA ☐
 Yes ☒ No ☐ NA ☐
 Yes ☒ No ☐
 Yes ☒ No ☐
 Yes ☐ No ☒ NA ☐
 Yes ☒ No ☐ No VOA Vials ☐
 Yes ☐ No ☒
 Yes ☒ No ☐
 Yes ☒ No ☐
 Yes ☒ No ☐
 Yes ☒ No ☐

of preserved bottles checked for pH: *7*
 Adjusted? *NO*
 Checked by: *JA*

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

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



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	10/7/2015 @ 9:35 am
End Date and Time	10/7/2015 @ 9:50 am

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sudge	<input type="checkbox"/>

Parts / Sample Intervals One	
------------------------------	--

Type of Sampler	Directly to sample jars
-----------------	-------------------------

☐ North Field R.O. Reject Discharge

☐ South Field R.O. Reject Discharge

Outfall / Sample Location:

Preservatives											
Container	Size	Material	# of Containers	Heat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaI-SO4	Other
1	500ml	Plastic	2	X			X				
2	40ml	VOA	3		X						
3	500ml	Plastic	1			X					
4	125ml	Plastic	1			X					
5	500ml	Plastic	2					X			
6	1L	Plastic	3			X					
7	40ml	VOA	2		X						
8	1L	Glass	1	X							
9	1L	Glass	2	X							
10	40ml	VOA	2	X							
11	40ml	VOA	2		X						

Field Data (Weather, Observations, Etc): 10/7/2015 Temp. 62.5 °F, Humidity 88%, Wind Dir. North, Wind Speed 8.1 mph, Conditions Partly Cloudy

Date and Time:

Field Temp. 24.9C

Field pH 7.92

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

October 30, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary RO Reject

OrderNo.: 1510416

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/8/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1510416**

Date Reported: **10/30/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary RO Reject

Collection Date: 10/7/2015 8:55:00 AM

Lab ID: 1510416-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	10/20/2015 6:39:18 PM	B29683
Lead	ND	0.00050		mg/L	1	10/20/2015 4:04:11 PM	B29683
Selenium	0.0094	0.0010		mg/L	1	10/20/2015 4:04:11 PM	B29683
Uranium	0.0059	0.00050		mg/L	1	10/20/2015 4:04:11 PM	B29683
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.75	0.678		pCi/L	1	10/21/2015	R29838
Radium-226 ±	0.852	0.678		pCi/L	1	10/21/2015	R29838
Radium-228	1	0.662		pCi/L	1	10/21/2015	R29838
Radium-228 ±	0.416	0.662		pCi/L	1	10/21/2015	R29838
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.8	2.0		mg/L	20	10/8/2015 9:53:17 PM	R29414
Chloride	68	10		mg/L	20	10/8/2015 9:53:17 PM	R29414
Sulfate	1800	25		mg/L	50	10/20/2015 1:16:14 AM	R29666
Nitrate+Nitrite as N	1.5	1.0		mg/L	5	10/20/2015 1:41:03 AM	R29666
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3220	20.0	*	mg/L	1	10/12/2015 3:12:00 PM	21779
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	10/20/2015	R29838
SM4500-H+B: PH							Analyst: MRA
pH	7.80	1.68	H	pH units	1	10/9/2015 2:20:53 PM	R29457
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	10/15/2015 5:32:19 PM	C29574
Barium	0.069	0.0020		mg/L	1	10/14/2015 8:23:38 PM	C29542
Boron	0.11	0.040		mg/L	1	10/15/2015 5:32:19 PM	C29574
Cadmium	ND	0.0020		mg/L	1	10/15/2015 5:32:19 PM	C29574
Chromium	ND	0.0060		mg/L	1	10/14/2015 8:23:38 PM	C29542
Cobalt	ND	0.0060		mg/L	1	10/14/2015 8:23:38 PM	C29542
Copper	ND	0.0060		mg/L	1	10/14/2015 8:23:38 PM	C29542
Iron	0.039	0.020		mg/L	1	10/14/2015 8:23:38 PM	C29542
Manganese	0.012	0.0020		mg/L	1	10/14/2015 8:23:38 PM	C29542
Molybdenum	ND	0.0080		mg/L	1	10/15/2015 5:32:19 PM	C29574
Nickel	ND	0.010		mg/L	1	10/14/2015 8:23:38 PM	C29542
Silver	ND	0.0050		mg/L	1	10/14/2015 8:23:38 PM	C29542
Zinc	0.023	0.010		mg/L	1	10/16/2015 7:52:40 PM	B29618
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/15/2015 12:45:19 PM	21848

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510416

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CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary RO Reject

Collection Date: 10/7/2015 8:55:00 AM

Lab ID: 1510416-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/15/2015 3:45:45 PM	21803
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Aroclor 1221	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Aroclor 1232	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Aroclor 1242	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Aroclor 1248	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Aroclor 1254	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Aroclor 1260	ND	1.0		µg/L	1	10/15/2015 2:28:06 AM	21811
Surr: Decachlorobiphenyl	82.0	17.7-151		%REC	1	10/15/2015 2:28:06 AM	21811
Surr: Tetrachloro-m-xylene	76.4	20.6-151		%REC	1	10/15/2015 2:28:06 AM	21811
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/12/2015 5:55:41 PM	21793
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/12/2015 5:55:41 PM	21793
Surr: DNOP	126	72-136		%REC	1	10/12/2015 5:55:41 PM	21793
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/9/2015 4:55:33 PM	R29422
Surr: BFB	90.2	57.8-137		%REC	1	10/9/2015 4:55:33 PM	R29422
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	10/14/2015 5:02:42 PM	21812
1-Methylnaphthalene	ND	2.0		µg/L	1	10/14/2015 5:02:42 PM	21812
2-Methylnaphthalene	ND	2.0		µg/L	1	10/14/2015 5:02:42 PM	21812
Benzo(a)pyrene	ND	0.070		µg/L	1	10/14/2015 5:02:42 PM	21812
Surr: Benzo(e)pyrene	75.2	37.2-136		%REC	1	10/14/2015 5:02:42 PM	21812
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Toluene	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Ethylbenzene	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Carbon Tetrachloride	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Chloroform	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
1,1-Dichloroethane	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
1,1-Dichloroethene	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Methylene Chloride	ND	3.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397

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		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1510416**

Date Reported: **10/30/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary RO Reject

Collection Date: 10/7/2015 8:55:00 AM

Lab ID: 1510416-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Vinyl chloride	ND	1.0		µg/L	1	10/8/2015 5:06:31 PM	R29397
Xylenes, Total	ND	1.5		µg/L	1	10/8/2015 5:06:31 PM	R29397
Surr: 1,2-Dichloroethane-d4	92.1	70-130		%REC	1	10/8/2015 5:06:31 PM	R29397
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	10/8/2015 5:06:31 PM	R29397
Surr: Dibromofluoromethane	97.3	70-130		%REC	1	10/8/2015 5:06:31 PM	R29397
Surr: Toluene-d8	101	70-130		%REC	1	10/8/2015 5:06:31 PM	R29397
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	10/20/2015	21920

Refer to the QC Summary report and 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.

Analytical Report

Lab Order 1510416

Date Reported: 10/30/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary RO Reject

Collection Date:

Lab ID: 1510416-002

Matrix: TRIP BLANK

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/15/2015 4:27:08 PM	21803
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Toluene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Ethylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Naphthalene	ND	2.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1-Methylnaphthalene	ND	4.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
2-Methylnaphthalene	ND	4.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Acetone	ND	10		µg/L	1	10/8/2015 5:35:16 PM	R29397
Bromobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Bromodichloromethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Bromoform	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Bromomethane	ND	3.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
2-Butanone	ND	10		µg/L	1	10/8/2015 5:35:16 PM	R29397
Carbon disulfide	ND	10		µg/L	1	10/8/2015 5:35:16 PM	R29397
Carbon Tetrachloride	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Chlorobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Chloroethane	ND	2.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Chloroform	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Chloromethane	ND	3.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
2-Chlorotoluene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
4-Chlorotoluene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
cis-1,2-DCE	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Dibromochloromethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Dibromomethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1-Dichloroethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1-Dichloroethene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2-Dichloropropane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397

Refer to the QC Summary report and 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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	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510416

Date Reported: 10/30/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary RO Reject

Collection Date:

Lab ID: 1510416-002

Matrix: TRIP BLANK

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,3-Dichloropropane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
2,2-Dichloropropane	ND	2.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Hexachlorobutadiene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
2-Hexanone	ND	10		µg/L	1	10/8/2015 5:35:16 PM	R29397
Isopropylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
4-Isopropyltoluene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
4-Methyl-2-pentanone	ND	10		µg/L	1	10/8/2015 5:35:16 PM	R29397
Methylene Chloride	ND	3.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
n-Butylbenzene	ND	3.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
n-Propylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
sec-Butylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Styrene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
tert-Butylbenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
trans-1,2-DCE	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Trichlorofluoromethane	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Vinyl chloride	ND	1.0		µg/L	1	10/8/2015 5:35:16 PM	R29397
Xylenes, Total	ND	1.5		µg/L	1	10/8/2015 5:35:16 PM	R29397
Surr: 1,2-Dichloroethane-d4	96.3	70-130		%REC	1	10/8/2015 5:35:16 PM	R29397
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	10/8/2015 5:35:16 PM	R29397
Surr: Dibromofluoromethane	98.2	70-130		%REC	1	10/8/2015 5:35:16 PM	R29397
Surr: Toluene-d8	97.9	70-130		%REC	1	10/8/2015 5:35:16 PM	R29397

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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898765		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898766		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	103	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.6	85	115			
Copper	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.48	0.010	0.5000	0	96.9	85	115			
Silver	0.091	0.0050	0.1000	0	90.6	85	115			

Sample ID LLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C29542		RunNo: 29542							
Prep Date:	Analysis Date: 10/14/2015		SeqNo: 898767		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	96.0	50	150			
Chromium	ND	0.0060	0.006000	0	91.3	50	150			
Cobalt	ND	0.0060	0.006000	0	94.3	50	150			
Copper	0.0061	0.0060	0.006000	0	102	50	150			
Iron	ND	0.020	0.02000	0	97.4	50	150			
Manganese	ND	0.0020	0.002000	0	94.5	50	150			
Nickel	ND	0.010	0.005000	0	92.2	50	150			
Silver	ND	0.0050	0.005000	0	95.4	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB-C	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: C29574		RunNo: 29574							
Prep Date:	Analysis Date: 10/15/2015		SeqNo: 900085		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Molybdenum	ND	0.0080								

Sample ID LCS-C	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: C29574		RunNo: 29574							
Prep Date:	Analysis Date: 10/15/2015		SeqNo: 900086		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.51	0.020	0.5000	0	103	85	115			
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.7	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			

Sample ID LLLCS-C	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: C29574		RunNo: 29574							
Prep Date:	Analysis Date: 10/15/2015		SeqNo: 900087		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	102	50	150			
Boron	ND	0.040	0.04000	0	93.8	50	150			
Cadmium	0.0020	0.0020	0.002000	0	102	50	150			
Molybdenum	0.012	0.0080	0.008000	0	145	50	150			

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B29618		RunNo: 29618							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 901616		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID LCS-B	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B29618		RunNo: 29618							
Prep Date:	Analysis Date: 10/16/2015		SeqNo: 901617		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.46	0.010	0.5000	0	91.1	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#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	LLLCS-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B29618		RunNo: 29618					
Prep Date:			Analysis Date: 10/16/2015		SeqNo: 901618		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010	0.005000	0	60.6	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: B29683			RunNo: 29683						
Prep Date:	Analysis Date: 10/20/2015			SeqNo: 903929		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.2	85	115			
Lead	0.012	0.00050	0.01250	0	98.6	85	115			
Selenium	0.023	0.0010	0.02500	0	90.5	85	115			
Uranium	0.012	0.00050	0.01250	0	96.7	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals						
Client ID: BatchQC	Batch ID: B29683			RunNo: 29683						
Prep Date:	Analysis Date: 10/20/2015			SeqNo: 903932		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	96.3	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	ND	0.0010	0.001000	0	88.7	50	150			
Uranium	ND	0.00050	0.0005000	0	99.8	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: B29683			RunNo: 29683						
Prep Date:	Analysis Date: 10/20/2015			SeqNo: 903934		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21848		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	21848		RunNo:	29565				
Prep Date:	10/14/2015		Analysis Date:	10/15/2015		SeqNo:	899831		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-21848			SampType:	LCS		TestCode:	EPA Method 245.1: Mercury				
Client ID:	LCSW			Batch ID:	21848		RunNo:	29565				
Prep Date:	10/14/2015			Analysis Date:	10/15/2015		SeqNo:	899832			Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Mercury	0.0052	0.00020	0.005000	0	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#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29414		RunNo: 29414							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894692		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: R29414		RunNo: 29414							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894693		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	4.8	0.50	5.000	0	96.4	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29666		RunNo: 29666							
Prep Date:	Analysis Date: 10/19/2015		SeqNo: 903381		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29666		RunNo: 29666							
Prep Date:	Analysis Date: 10/19/2015		SeqNo: 903382		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.1	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	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#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21803		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	21803		RunNo:	29577				
Prep Date:	10/12/2015		Analysis Date:	10/15/2015		SeqNo:	900397		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-21803		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 21803		RunNo: 29577					
Prep Date:	10/12/2015		Analysis Date: 10/15/2015		SeqNo: 900399		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	70	130			

Sample ID	1510416-001DMS		SampType:	MS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	Temporary R.O. Rej		Batch ID:	21803		RunNo:	29577				
Prep Date:	10/12/2015		Analysis Date:	10/15/2015		SeqNo:	900412		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.12	0.010	0.1000	0	121	45.7	164				

Sample ID	1510416-001DMSD			SampType:	MSD		TestCode:	EPA Method 8011/504.1: EDB			
Client ID:	Temporary R.O. Rej			Batch ID:	21803		RunNo:	29577			
Prep Date:	10/12/2015		Analysis Date:	10/15/2015		SeqNo:	900413		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.13	0.010	0.1000	0	127	45.7	164	4.84	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#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21793		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 21793		RunNo: 29489					
Prep Date:	10/12/2015		Analysis Date: 10/12/2015		SeqNo: 896837		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	1.3		1.000		128	72	136			

Sample ID	LCS-21793		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	21793		RunNo:	29489				
Prep Date:	10/12/2015		Analysis Date:	10/12/2015		SeqNo:	896840		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	107	52.4	154				
Surr: DNOP	0.55		0.5000		110	72	136				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R29422		RunNo: 29422							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 895544		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		88.1	57.8	137			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R29422		RunNo: 29422							
Prep Date:	Analysis Date: 10/9/2015		SeqNo: 895545		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	93.6	80	120			
Surr: BFB	19		20.00		93.0	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21811		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 21811		RunNo: 29529					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 899307		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.1		2.500		85.2	17.7	151			
Surr: Tetrachloro-m-xylene	2.1		2.500		82.8	20.6	151			

Sample ID	LCS-21811		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 21811		RunNo: 29529					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 899308		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	58.9	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	83.5	25.6	164			
Surr: Decachlorobiphenyl	1.8		2.500		74.0	17.7	151			
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	20.6	151			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R29397			RunNo: 29397						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894163		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	113	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R29397			RunNo: 29397						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894164		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R29397			RunNo: 29397					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894164	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R29397			RunNo: 29397						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894164		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.4	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#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21812	SampType: MBLK		TestCode: EPA Method 8310: PAHs						
Client ID:	PBW	Batch ID: 21812		RunNo: 29527						
Prep Date:	10/13/2015	Analysis Date: 10/14/2015		SeqNo: 898372		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	21		20.00		103	37.2	136			

Sample ID	LCS-21812			SampType:	LCS			TestCode:	EPA Method 8310: PAHs		
Client ID:	LCSW			Batch ID:	21812			RunNo:	29527		
Prep Date:	10/13/2015			Analysis Date:	10/14/2015			SeqNo:	898374		
								Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	65	2.0	80.00	0	80.7	57.8	83.9				
1-Methylnaphthalene	67	2.0	80.20	0	83.1	43.5	88.5				
2-Methylnaphthalene	65	2.0	80.00	0	81.0	34.2	94.5				
Benzo(a)pyrene	0.41	0.070	0.5020	0	81.7	56.3	98.6				
Surr: Benzo(e)pyrene	21		20.00		107	37.2	136				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21920		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 21920		RunNo: 29663					
Prep Date:	10/20/2015		Analysis Date: 10/20/2015		SeqNo: 903297		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-21920		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 21920		RunNo: 29663					
Prep Date:	10/20/2015		Analysis Date: 10/20/2015		SeqNo: 903298		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	19	2.5	20.00	0	96.2	64.4	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#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R29838		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R29838		RunNo:	29838				
Prep Date:			Analysis Date:	10/20/2015		SeqNo:	908961		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R29838			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R29838		RunNo:	29838			
Prep Date:				Analysis Date:	10/20/2015		SeqNo:	908962	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.451		0.5000	0	90.2	90	110				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R29838		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R29838		RunNo: 29838					
Prep Date:			Analysis Date: 10/21/2015		SeqNo: 908965		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.209	0.513								
Radium-226 ±	0.319	0.513								
Radium-228	0.221	0.666								
Radium-228 ±	0.31	0.666								

Sample ID	MB-R29838		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R29838		RunNo: 29838					
Prep Date:			Analysis Date: 10/21/2015		SeqNo: 908967		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.411	0.965								
Radium-226 ±	0.571	0.965								
Radium-228	0.403	0.785								
Radium-228 ±	0.384	0.785								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510416

30-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-21779		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 21779		RunNo: 29476					
Prep Date:	10/11/2015		Analysis Date: 10/12/2015		SeqNo: 896502		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21779		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21779		RunNo: 29476					
Prep Date:	10/11/2015		Analysis Date: 10/12/2015		SeqNo: 896503		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	999	20.0	1000	0	99.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1510416

RcptNo: 1

Received by/date:	<i>CS</i>	<i>10/08/15</i>
Logged By:	Lindsay Mangin	10/8/2015 9:07:00 AM
Completed By:	Lindsay Mangin	10/8/2015 12:52:31 PM
Reviewed By:	<i>CS</i>	<i>10/08/15</i>

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☒ No ☐ Not Present ☒
Yes ☒ No ☐ Not Present ☐
Courier

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?

Yes ☒ No ☐ NA ☐
Yes ☒ No ☐ NA ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☐ No ☒ NA ☐

10. VOA vials have zero headspace?
11. Were any sample containers received broken?

Yes ☒ No ☐ No VOA Vials ☐
Yes ☐ No ☒

12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody?
14. Is it clear what analyses were requested?
15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐

of preserved bottles checked for pH: *2* or *12* unless noted
Adjusted? *NO*
Checked by: *JA*

Special Handling (if applicable)

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

Yes ☐ No ☐ NA ☒

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

17. Additional remarks:

18. Cooler Information

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

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Project #: P.O. # 167796

Project Manager:

Project Manager:

☐ Level 4 (Full Validation)

Sampler: Elizabeth Salsberry

On Ice:	X	Yes	<input type="checkbox"/>	No
---------	----------	------------	--------------------------	-----------

Sample Temperature: 1.0°C

Container Type and #	Preservative Type	HEAL No. 1510410
-------------------------	----------------------	---------------------

Date	Time	Matrix	Sample Request ID
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Temporary R.O. Reject
10/7/15	8:55	liquid	Trip Blank
Date:	Time:	Relinquished by: Elizabeth Salisbury	
10/7/15	12:00	<i>Elizabeth Salisbury</i>	
Date:	Time:	Relinquished by:	

Received by:

Ullme-Sachs 10/08/15 0907

Received by:

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2-
Trichloroethane; 1,1,2-Trichloroethylene; 1,1-Dichloroethane; 1,1-Dichloroethylene; 1,2-
Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform;
Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly Temporary RO Reject Sample Details



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	10/7/2015 @ 8:55am
End Date and Time	10/7/2015 @ 9:11am

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Parts / Sample Intervals One

Type of Sampler	Directly to sample jars
-----------------	-------------------------

☐ North Field R.O. Reject Discharge

☒ South Field R.O. Reject Discharge

Outfall / Sample Location:

Container	Size	Material	# of Containers	Preservatives							Analysis and/or Method Requested pH, Cl, F, SO ₄ , NO ₂ /NO ₃ , TDS
				Neat (None)	HCL	HNO ₃	H ₂ SO ₄	NaOH	Na ₂ SO ₃	NaHSO ₄	
1	500ml	Plastic	2	X			X				8015 GRO
2	40ml	VOA	3		X						6020 total metals, 7470 Hg
3	500ml	Plastic	1			X					6020 Dissolved Metals
4	125ml	Plastic	1			X					Cyanide
5	500ml	Plastic	2					X			Radium 226/228
6	1L	Plastic	3			X					8260 see attached list
7	40ml	VOA	2		X						8270 see attached list
8	1L	Glass	1	X							8032 PCBs
9	1L	Glass	2	X							8015 DRO
10	40ml	VOA	2	X							Radium 226/228
11	40ml	VOA	2	X							

Field Data (Weather, Observations, Etc): 10/7/2015 Temp: 60.8 °F, Humidity 94%, Wind Dir. North, Wind Speed 8.1 mph, Conditions Partly Cloudy

Date and Time:

Field Temp. 8.13 Field pH 22.7C

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, October 30, 2015 12:44 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Coons, Christina (Christie); Combs, Robert; Denton, Scott
Subject: ACO Civil Penalty Payment for September 2015
Attachments: 151030 Subm' RO Reject ACO - Civil Penalty Payment.pdf

Jim & Carl,

Attached is a copy of the Civil Penalty Payment for September concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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October 30, 2015

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt
7015 0640 0006 6577 5506

Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
September 2015 ACO – Civil Penalty Payment
Navajo Refining Company, L.L.C.
Artesia Refinery

Dear Director:

Enclosed please find a check in the amount of \$3,000 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for September 2015 submitted electronically on October 12, 2015. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
HFC Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
151030 RO Reject ACO – Civil Penalty Payment

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 10/29/2015
Check Amount \$ 3,000.00
Vendor No
Payment Document
Company Code

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
10/28/2015	102815	STIPULATED PENALTY RO FLUID DISCHAR	3,000.00	0.00	3,000.00

Payment document	Check number	Date	Currency	Payment amount
	1000311882	10/29/2015	USD	*****3,000.00*

! PLEASE FOLD ON PERFORATION AND DETACH HERE !

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT. CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611

10/29/2015

PAY EXACTLY:

*****3,000.00*USD

VOID AFTER 180 DAYS

PAY *** THREE THOUSAND and 00 /100 USD***

TO THE
ORDER OF STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225
Bank of America N.A.

Stephen D Wise
AUTHORIZED SIGNATURE

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Monday, October 12, 2015 2:52 PM
To: Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Coons, Christina (Christie); Combs, Robert; Denton, Scott
Subject: ACO Monthly Report for September 2015
Attachments: 151012 ACO Monthly Report for September 2015.pdf

Jim & Carl,

Attached it the monthly report for September concerning the RO Reject.

Please let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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October 12, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – September 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's October 2015 monthly report, for the period of September 1-30, under the Order.

Specifically, this report covers the September 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire September reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from September 1 through September 30.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from September 1 through September 30.

Navajo has calculated a penalty of \$3,000 for September 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 30 days in September. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on September 3, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Navajo is currently preparing a permit modification request to Discharge Permit GW-028 for installation of a third permanent primary RO unit to replace the temporary RO unit and the installation of a secondary RO unit to improve recovery of water as part of Navajo's water conservation effort.

Navajo is also evaluating options for the underground injection of RO reject fluid.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. Navajo submitted an *Evaluation of Groundwater Quality – RO Reject Fields* memo on August 27, 2015, and the *Background Groundwater Investigation Report* on September 2, 2015, in support of this modification request.

OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015. Navajo submitted proof of completion of the public notice, including an affidavit of mailing and the list of property owners, proof of publication, and an affidavit of posting, to the OCD on September 3, 2015.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Reports

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
9/1/2015	128	119	247	8,469	45	1,546	10,015
9/2/2015	200	168	368	12,617	57	1,944	14,561
9/3/2015	109	175	284	9,737	57	1,954	11,691
9/4/2015	110	182	292	10,011	57	1,954	11,965
9/5/2015	112	179	291	9,977	60	2,054	12,031
9/6/2015	112	178	290	9,943	59	2,027	11,970
9/7/2015	115	177	292	10,011	58	1,998	12,009
9/8/2015	114	181	295	10,114	60	2,046	12,160
9/9/2015	106	171	277	9,497	61	2,104	11,601
9/10/2015	115	178	293	10,046	63	2,159	12,205
9/11/2015	113	177	290	9,943	66	2,261	12,204
9/12/2015	114	178	292	10,011	65	2,231	12,242
9/13/2015	115	180	295	10,114	68	2,328	12,442
9/14/2015	116	179	295	10,114	69	2,358	12,472
9/15/2015	115	179	294	10,080	68	2,332	12,412
9/16/2015	120	180	300	10,286	71	2,432	12,718
9/17/2015	117	175	292	10,011	65	2,243	12,254
9/18/2015	115	177	292	10,011	69	2,383	12,394
9/19/2015	111	178	289	9,909	72	2,467	12,376
9/20/2015	115	179	294	10,080	63	2,173	12,253
9/21/2015	116	174	290	9,943	49	1,680	11,623
9/22/2015	115	176	291	9,977	51	1,763	11,740
9/23/2015	120	178	298	10,217	67	2,297	12,514
9/24/2015	116	176	292	10,011	72	2,465	12,476
9/25/2015	116	177	293	10,046	91	3,124	13,170
9/26/2015	121	164	285	9,771	73	2,490	12,261
9/27/2015	125	162	287	9,840	74	2,527	12,367
9/28/2015	126	163	289	9,909	73	2,507	12,416
9/29/2015	125	102	227	7,783	94	3,223	11,006
9/30/2015	123	100	223	7,646	73	2,510	10,156

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - October 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	30	\$3,000
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$3,000

Attachment 3
Analytical Lab Report



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

October 06, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1509214

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509214

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 9/3/2015 8:50:00 AM

Lab ID: 1509214-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	9/18/2015 2:59:55 PM	B28981
Lead	ND	0.0025		mg/L	5	9/18/2015 2:59:55 PM	B28981
Selenium	0.0086	0.0050		mg/L	5	9/18/2015 2:59:55 PM	B28981
Uranium	0.0056	0.0025		mg/L	5	9/18/2015 2:59:55 PM	B28981
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.7	0.563		pCi/L	1	9/28/2015	R29270
Radium-226 ±	0.701	0.563		pCi/L	1	9/28/2015	R29270
Radium-228	0.308	0.574		pCi/L	1	9/28/2015	R29270
Radium-228 ±	0.283	0.574		pCi/L	1	9/28/2015	R29270
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.2	2.0		mg/L	20	9/4/2015 11:00:00 PM	R28686
Chloride	300	10		mg/L	20	9/4/2015 11:00:00 PM	R28686
Nitrogen, Nitrate (As N)	2.0	0.10		mg/L	1	9/4/2015 10:47:35 PM	R28686
Sulfate	1800	50		mg/L	100	9/15/2015 12:07:52 AM	R28852
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3720	20.0	*	mg/L	1	9/10/2015 5:38:00 PM	21204
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	9/15/2015	R29270
SM4500-H+B: PH							Analyst: JRR
pH	7.89	1.68	H	pH units	1	9/8/2015 6:24:49 PM	R28726
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	9/10/2015 2:52:57 PM	B28759
Barium	0.059	0.0020		mg/L	1	9/10/2015 2:52:57 PM	B28759
Boron	0.098	0.040		mg/L	1	9/10/2015 2:52:57 PM	B28759
Cadmium	ND	0.0020		mg/L	1	9/10/2015 2:52:57 PM	B28759
Chromium	0.0067	0.0060		mg/L	1	9/11/2015 1:33:20 PM	A28781
Cobalt	0.0061	0.0060		mg/L	1	9/11/2015 1:33:20 PM	A28781
Copper	ND	0.0060		mg/L	1	9/10/2015 2:52:57 PM	B28759
Iron	0.048	0.020		mg/L	1	9/10/2015 2:52:57 PM	B28759
Manganese	ND	0.0020		mg/L	1	9/10/2015 2:52:57 PM	B28759
Molybdenum	ND	0.0080		mg/L	1	9/11/2015 1:33:20 PM	A28781
Nickel	ND	0.010		mg/L	1	9/10/2015 2:52:57 PM	B28759
Silver	ND	0.0050		mg/L	1	9/11/2015 1:33:20 PM	A28781
Zinc	0.019	0.010		mg/L	1	9/11/2015 1:33:20 PM	A28781
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/15/2015 3:50:01 PM	21298

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509214**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 9/3/2015 8:50:00 AM

Lab ID: 1509214-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	9/9/2015 2:48:42 PM	21198
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Aroclor 1221	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Aroclor 1232	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Aroclor 1242	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Aroclor 1248	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Aroclor 1254	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Aroclor 1260	ND	1.0		µg/L	1	9/11/2015 10:58:41 AM	21192
Surr: Decachlorobiphenyl	74.0	17.7-151		%REC	1	9/11/2015 10:58:41 AM	21192
Surr: Tetrachloro-m-xylene	67.6	20.6-151		%REC	1	9/11/2015 10:58:41 AM	21192
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	9/9/2015 4:47:41 PM	21183
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	9/9/2015 4:47:41 PM	21183
Surr: DNOP	108	72-136		%REC	1	9/9/2015 4:47:41 PM	21183
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/10/2015 1:16:54 PM	R28761
Surr: BFB	94.5	57.8-137		%REC	1	9/10/2015 1:16:54 PM	R28761
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	9/11/2015 8:09:56 AM	21193
1-Methylnaphthalene	ND	2.0		µg/L	1	9/11/2015 8:09:56 AM	21193
2-Methylnaphthalene	ND	2.0		µg/L	1	9/11/2015 8:09:56 AM	21193
Benzo(a)pyrene	ND	0.070		µg/L	1	9/11/2015 8:09:56 AM	21193
Surr: Benzo(e)pyrene	41.3	37.2-136		%REC	1	9/11/2015 8:09:56 AM	21193
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Toluene	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Ethylbenzene	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Carbon Tetrachloride	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Chloroform	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
1,1-Dichloroethane	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
1,1-Dichloroethene	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Methylene Chloride	ND	3.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509214**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 9/3/2015 8:50:00 AM

Lab ID: 1509214-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst: AG		
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Vinyl chloride	ND	1.0		µg/L	1	9/8/2015 2:48:27 PM	R28707
Xylenes, Total	ND	1.5		µg/L	1	9/8/2015 2:48:27 PM	R28707
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%REC	1	9/8/2015 2:48:27 PM	R28707
Surr: 4-Bromofluorobenzene	99.5	70-130		%REC	1	9/8/2015 2:48:27 PM	R28707
Surr: Dibromofluoromethane	97.9	70-130		%REC	1	9/8/2015 2:48:27 PM	R28707
Surr: Toluene-d8	99.1	70-130		%REC	1	9/8/2015 2:48:27 PM	R28707
TOTAL PHENOLICS BY SW-846 9067					Analyst: SCC		
Phenolics, Total Recoverable	ND	2.5		µg/L	1	9/30/2015	21585

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509214**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1509214-002

Matrix: TRIP BLANK

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/10/2015 1:42:19 PM	R28761
Surr: BFB	93.2	57.8-137		%REC	1	9/10/2015 1:42:19 PM	R28761
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Toluene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Ethylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Naphthalene	ND	2.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1-Methylnaphthalene	ND	4.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
2-Methylnaphthalene	ND	4.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Acetone	ND	10		µg/L	1	9/8/2015 3:17:15 PM	R28707
Bromobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Bromodichloromethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Bromoform	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Bromomethane	ND	3.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
2-Butanone	ND	10		µg/L	1	9/8/2015 3:17:15 PM	R28707
Carbon disulfide	ND	10		µg/L	1	9/8/2015 3:17:15 PM	R28707
Carbon Tetrachloride	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Chlorobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Chloroethane	ND	2.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Chloroform	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Chloromethane	ND	3.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
2-Chlorotoluene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
4-Chlorotoluene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
cis-1,2-DCE	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Dibromochloromethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Dibromomethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1-Dichloroethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1-Dichloroethene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509214**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1509214-002

Matrix: TRIP BLANK

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,2-Dichloropropane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,3-Dichloropropane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
2,2-Dichloropropane	ND	2.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Hexachlorobutadiene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
2-Hexanone	ND	10		µg/L	1	9/8/2015 3:17:15 PM	R28707
Isopropylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
4-Isopropyltoluene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
4-Methyl-2-pentanone	ND	10		µg/L	1	9/8/2015 3:17:15 PM	R28707
Methylene Chloride	ND	3.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
n-Butylbenzene	ND	3.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
n-Propylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
sec-Butylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Styrene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
tert-Butylbenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
trans-1,2-DCE	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Trichlorofluoromethane	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Vinyl chloride	ND	1.0		µg/L	1	9/8/2015 3:17:15 PM	R28707
Xylenes, Total	ND	1.5		µg/L	1	9/8/2015 3:17:15 PM	R28707
Surr: 1,2-Dichloroethane-d4	93.0	70-130		%REC	1	9/8/2015 3:17:15 PM	R28707
Surr: 4-Bromofluorobenzene	98.0	70-130		%REC	1	9/8/2015 3:17:15 PM	R28707
Surr: Dibromofluoromethane	97.2	70-130		%REC	1	9/8/2015 3:17:15 PM	R28707
Surr: Toluene-d8	100	70-130		%REC	1	9/8/2015 3:17:15 PM	R28707

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LCS	SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW	Batch ID: B28759			RunNo: 28759						
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 871972		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.50	0.020	0.5000	0	99.8	85	115			
Barium	0.49	0.0020	0.5000	0	98.9	85	115			
Boron	0.53	0.040	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Copper	0.47	0.0060	0.5000	0	94.2	85	115			
Iron	0.53	0.020	0.5000	0	107	85	115			
Manganese	0.49	0.0020	0.5000	0	97.9	85	115			
Nickel	0.48	0.010	0.5000	0	95.4	85	115			

Sample ID LLCS	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: BatchQC	Batch ID: B28759			RunNo: 28759						
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 871973		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	104	50	150			
Barium	ND	0.0020	0.002000	0	90.0	50	150			
Boron	ND	0.040	0.04000	0	95.7	50	150			
Cadmium	ND	0.0020	0.002000	0	93.5	50	150			
Copper	ND	0.0060	0.006000	0	98.2	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Nickel	ND	0.010	0.005000	0	119	50	150			

Sample ID MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: PBW	Batch ID: B28759			RunNo: 28759						
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 871977		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample 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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	1509214-001IMS		SampType:	MS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	Temporary R.O. Rej		Batch ID:	B28759		RunNo:	28759			
Prep Date:			Analysis Date:	9/10/2015		SeqNo:	872105		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0.004060	106	70	130			
Barium	0.50	0.0020	0.5000	0.05899	88.1	70	130			
Boron	0.64	0.040	0.5000	0.09823	108	70	130			
Cadmium	0.47	0.0020	0.5000	0	93.9	70	130			
Copper	0.47	0.0060	0.5000	0	94.4	70	130			
Iron	0.50	0.020	0.5000	0.04757	90.7	70	130			
Manganese	0.46	0.0020	0.5000	0.001650	91.3	70	130			
Nickel	0.41	0.010	0.5000	0	82.0	70	130			

Sample ID	1509214-001IMSD		SampType:	MSD		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	Temporary R.O. Rej		Batch ID:	B28759		RunNo:	28759			
Prep Date:			Analysis Date:	9/10/2015		SeqNo:	872106		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0.004060	106	70	130	0.150	20	
Barium	0.50	0.0020	0.5000	0.05899	88.6	70	130	0.493	20	
Boron	0.65	0.040	0.5000	0.09823	110	70	130	1.05	20	
Cadmium	0.47	0.0020	0.5000	0	94.6	70	130	0.694	20	
Copper	0.47	0.0060	0.5000	0	94.4	70	130	0.0890	20	
Iron	0.51	0.020	0.5000	0.04757	92.7	70	130	1.99	20	
Manganese	0.46	0.0020	0.5000	0.001650	91.8	70	130	0.605	20	
Nickel	0.41	0.010	0.5000	0	82.1	70	130	0.178	20	

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	A28781		RunNo:	28781			
Prep Date:			Analysis Date:	9/11/2015		SeqNo:	872822		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	98.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.3	85	115			
Silver	0.089	0.0050	0.1000	0	89.1	85	115			
Zinc	0.49	0.010	0.5000	0	97.9	85	115			

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	A28781		RunNo:	28781			
Prep Date:			Analysis Date:	9/11/2015		SeqNo:	872823		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060	0.006000	0	82.5	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 | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A28781		RunNo: 28781							
Prep Date:	Analysis Date: 9/11/2015		SeqNo: 872823		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060	0.006000	0	86.0	50	150			
Molybdenum	ND	0.0080	0.008000	0	53.8	50	150			
Silver	ND	0.0050	0.005000	0	86.8	50	150			
Zinc	ND	0.010	0.005000	0	103	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A28781		RunNo: 28781							
Prep Date:	Analysis Date: 9/11/2015		SeqNo: 872843		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Molybdenum	ND	0.0080								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID 1509214-001IMS	SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: Temporary R.O. Rej	Batch ID: A28781		RunNo: 28781							
Prep Date:	Analysis Date: 9/11/2015		SeqNo: 873630		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.49	0.0060	0.5000	0.006680	96.5	70	130			
Cobalt	0.46	0.0060	0.5000	0.006090	91.2	70	130			
Molybdenum	0.47	0.0080	0.5000	0	93.9	70	130			
Silver	0.072	0.0050	0.1000	0	71.5	70	130			
Zinc	0.50	0.010	0.5000	0.01942	97.0	70	130			

Sample ID 1509214-001IMSD	SampType: MSD		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: Temporary R.O. Rej	Batch ID: A28781		RunNo: 28781							
Prep Date:	Analysis Date: 9/11/2015		SeqNo: 873631		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.50	0.0060	0.5000	0.006680	98.3	70	130	1.84	20	
Cobalt	0.47	0.0060	0.5000	0.006090	93.3	70	130	2.27	20	
Molybdenum	0.47	0.0080	0.5000	0	93.6	70	130	0.403	20	
Silver	0.074	0.0050	0.1000	0	74.4	70	130	3.93	20	
Zinc	0.50	0.010	0.5000	0.01942	97.0	70	130	0.0436	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#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	1509214-001IMS			SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals			
Client ID:	Temporary R.O. Rej			Batch ID:	B28981		RunNo:	28981			
Prep Date:				Analysis Date:	9/18/2015		SeqNo:	879521		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.13	0.0050	0.1250	0.001661	99.8	70	130				
Lead	0.061	0.0025	0.06250	0	97.7	70	130				
Selenium	0.12	0.0050	0.1250	0.008634	92.3	70	130				
Uranium	0.072	0.0025	0.06250	0.005627	106	70	130				

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B28981		RunNo: 28981					
Prep Date:			Analysis Date: 9/18/2015		SeqNo: 879546		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.3	85	115			
Lead	0.012	0.00050	0.01250	0	99.4	85	115			
Selenium	0.023	0.0010	0.02500	0	91.2	85	115			
Uranium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B28981			RunNo: 28981					
Prep Date:		Analysis Date: 9/18/2015			SeqNo: 879550		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	93.3	50	150			
Lead	0.00054	0.00050	0.0005000	0	109	50	150			
Selenium	ND	0.0010	0.001000	0	89.0	50	150			
Uranium	0.00052	0.00050	0.0005000	0	104	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B28981			RunNo: 28981					
Prep Date:		Analysis Date: 9/18/2015			SeqNo: 879554		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-21298		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	21298		RunNo:	28872				
Prep Date:	9/15/2015		Analysis Date:	9/15/2015		SeqNo:	875782		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-21298		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 21298		RunNo: 28872					
Prep Date:	9/15/2015		Analysis Date: 9/15/2015		SeqNo: 875785		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	95.4	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28686		RunNo: 28686							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 869229		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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28686		RunNo: 28686							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 869230		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	97.5	90	110			
Chloride	4.9	0.50	5.000	0	98.5	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28852		RunNo: 28852							
Prep Date:	Analysis Date: 9/14/2015		SeqNo: 875093		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28852		RunNo: 28852							
Prep Date:	Analysis Date: 9/14/2015		SeqNo: 875094		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.8	0.50	10.00	0	98.4	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#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-21198		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	21198		RunNo:	28723				
Prep Date:	9/9/2015		Analysis Date:	9/9/2015		SeqNo:	870483		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-21198		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 21198		RunNo: 28723					
Prep Date:	9/9/2015		Analysis Date: 9/9/2015		SeqNo: 870484		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.078	0.010	0.1000	0	78.0	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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-21183		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 21183		RunNo: 28717					
Prep Date:	9/8/2015		Analysis Date: 9/9/2015		SeqNo: 870900		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		102	72	136			

Sample ID	LCS-21183		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 21183		RunNo: 28717					
Prep Date:	9/8/2015		Analysis Date: 9/9/2015		SeqNo: 870912		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.52		0.5000		104	72	136			

Sample ID	1509214-001BMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	Temporary R.O. Rej		Batch ID: 21183		RunNo: 28717					
Prep Date:	9/8/2015		Analysis Date: 9/9/2015		SeqNo: 870914		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	123	41.3	177			
Surr: DNOP	0.61		0.5000		122	72	136			

Sample ID	1509214-001BMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	Temporary R.O. Rej		Batch ID:	21183		RunNo:	28717				
Prep Date:	9/8/2015		Analysis Date:	9/9/2015		SeqNo:	870915		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	-94.6	317	18.0	22.1		
Surr: DNOP	0.54		0.5000		108	72	136	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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R28761		RunNo: 28761					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 872128		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		90.2	57.8	137			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R28761		RunNo: 28761					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 872129		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.9	80	120			
Surr: BFB	19		20.00		94.5	57.8	137			

Sample ID	1509214-001AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	Temporary R.O. Rej		Batch ID: R28761		RunNo: 28761					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 872139		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0	85.6	70	130			
Surr: BFB	20		20.00		99.4	57.8	137			

Sample ID	1509214-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	Temporary R.O. Rej		Batch ID:	R28761		RunNo:	28761				
Prep Date:			Analysis Date:	9/10/2015		SeqNo:	872140		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.0	70	130	9.31	20		
Surr: BFB	21		20.00		104	57.8	137	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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-21192		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 21192		RunNo: 28758					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 872597		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.6		2.500		62.8	17.7	151			
Surr: Tetrachloro-m-xylene	1.3		2.500		50.4	20.6	151			

Sample ID	LCS-21192		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 21192		RunNo: 28758					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 873603		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.2	1.0	5.000	0	44.8	9.01	142			
Aroclor 1260	3.3	1.0	5.000	0	65.3	25.6	164			
Surr: Decachlorobiphenyl	1.4		2.500		58.0	17.7	151			
Surr: Tetrachloro-m-xylene	1.3		2.500		52.0	20.6	151			

Sample ID	LCSD-21192	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	21192	RunNo:	28758					
Prep Date:	9/9/2015	Analysis Date:	9/11/2015	SeqNo:	873604	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.0	1.0	5.000	0	39.0	9.01	142	13.7	26.9	
Aroclor 1260	3.0	1.0	5.000	0	59.2	25.6	164	9.84	29.1	
Surr: Decachlorobiphenyl	1.3		2.500		53.2	17.7	151	0	0	
Surr: Tetrachloro-m-xylene	1.1		2.500		42.8	20.6	151	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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R28707			RunNo: 28707					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870059		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Toluene	20	1.0	20.00	0	100	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	117	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	94.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28707			RunNo: 28707					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870063		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28707			RunNo: 28707					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870063	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R28707	RunNo:	28707					
Prep Date:		Analysis Date:	9/8/2015	SeqNo:	870063	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.3	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.5	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.0		10.00		90.4	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#: 1509214

06-Oct-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID MB-21193	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 21193		RunNo: 28760							
Prep Date: 9/9/2015	Analysis Date: 9/11/2015		SeqNo: 872124		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	7.7		20.00		38.7	37.2	136			

Sample ID LCS-21193	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 21193		RunNo: 28760							
Prep Date: 9/9/2015	Analysis Date: 9/11/2015		SeqNo: 872224		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	60	2.0	80.00	0	74.8	57.8	83.9			
1-Methylnaphthalene	60	2.0	80.20	0	75.2	43.5	88.5			
2-Methylnaphthalene	60	2.0	80.00	0	74.6	34.2	94.5			
Benzo(a)pyrene	0.38	0.070	0.5020	0	75.7	56.3	98.6			
Surr: Benzo(e)pyrene	9.9		20.00		49.3	37.2	136			

Sample ID LCSD-21193	SampType: LCSD		TestCode: EPA Method 8310: PAHs							
Client ID: LCSS02	Batch ID: 21193		RunNo: 28760							
Prep Date: 9/9/2015	Analysis Date: 9/11/2015		SeqNo: 872225		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	59	2.0	80.00	0	73.6	57.8	83.9	1.55	20	
1-Methylnaphthalene	59	2.0	80.20	0	73.8	43.5	88.5	1.94	20	
2-Methylnaphthalene	58	2.0	80.00	0	72.8	34.2	94.5	2.46	20	
Benzo(a)pyrene	0.37	0.070	0.5020	0	73.7	56.3	98.6	2.67	20	
Surr: Benzo(e)pyrene	9.3		20.00		46.4	37.2	136	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#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-21585		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 21585		RunNo: 29183					
Prep Date:	9/30/2015		Analysis Date: 9/30/2015		SeqNo: 886370		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-21585		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	21585		RunNo:	29183				
Prep Date:	9/30/2015		Analysis Date:	9/30/2015		SeqNo:	886371		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	17	2.5	20.00	0	83.6	64.4	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#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R29270		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R29270		RunNo:	29270				
Prep Date:			Analysis Date:	9/15/2015		SeqNo:	889324		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R29270			SampType:	LCS			TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R29270			RunNo:	29270			
Prep Date:				Analysis Date:	9/15/2015			SeqNo:	889325		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Cyanide	0.478		0.5000	0	95.6	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#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R29270	SampType: MBLK			TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID: R29270			RunNo: 29270					
Prep Date:		Analysis Date: 9/28/2015			SeqNo: 889327		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.461	0.612								
Radium-226 ±	0.431	0.612								
Radium-228	0.202	0.549								
Radium-228 ±	0.259	0.549								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509214

06-Oct-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-21204		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	21204		RunNo:	28757				
Prep Date:	9/9/2015		Analysis Date:	9/10/2015		SeqNo:	871932		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-21204		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21204		RunNo: 28757					
Prep Date:	9/9/2015		Analysis Date: 9/10/2015		SeqNo: 871933		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	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: NAVAJO REFINING CO

Work Order Number: 1509214

RcptNo: 1

Received by/date:

Logged By: **Celina Sessa**

9/4/2015 10:20:00 AM

Completed By: **Celina Sessa**

9/4/2015 12:54:16 PM

Reviewed By:

Chain of Custody

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

[Log In](#)

- | | | | |
|---|---|--|---------------------------------------|
| 4. Was an attempt made to cool the samples? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 6. Sample(s) in proper container(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Sufficient sample volume for indicated test(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Was preservative added to bottles? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 10. VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 14. Is it clear what analyses were requested? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
- # of preserved bottles checked for pH: (K2)

Adjusted? ✓

Checked by: _____

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			

ANALYSIS LABORATORY

Date Time

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, I, Zn
VOCs: 1,1,1-Trichloroethane, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethene, 1,1,2-Trichloroethane, 1,1,2,2-Trichloroethene, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dibromoethane, 1,2-Dichloroethane, Benzene, Carbon Tetrachloride, Chloroform, Dichloromethane, Ethylbenzene, Toluene, Total Xylenes, Vinyl Chloride
SVOCS: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene

Date	Time
------	------

Received by:

Date:	Time:	Relinquished by:
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14

Analysis Request

Sample Temperature: 3.

HEAL No.

-00-

[illegible][illegible][illegible]

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--	--

[illegible]

Date	Time
------	------

1771

Date Time

Date:	Time:	Relinquished by:
-------	-------	------------------

14



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly Temporary RO Reject Sample Details



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salisbury
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	9/3/2015 @ 8:45
End Date and Time	8/3/2015 @ 9:05

Sample Type	Grab
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Parts / Sample Intervals	One
--------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location: ☐ North Field R.O. Reject Discharge ☒ South Field R.O. Reject Discharge

Preservatives											Analysis and/or Method Requested pH, Cl, F, SO4, NO2/NO3, TDS
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	
1	500ml	Plastic	2	X			X				
2	40ml	VOA	3		X						8015 GRO
3	500ml	Plastic	1			X					6020 total metals, 7470 Hg
4	125ml	Plastic	1			X					6020 Dissolved Metals
5	500ml	Plastic	2					X			Cyanide
6	1L	Plastic	3				X				Radium 226/228
7	40ml	VOA	2		X						8260 see attached list
8	1L	Glass	1	X							8270 see attached list
9	1L	Glass	2	X							8082 PCBs
10	40ml	VOA	2	X							8015 DRO
11	40ml	VOA	2		X						Radium 226/228

Field Data (Weather, Observations, Etc):	9/3/2015 Temp. 77.0 °F, Humidity 47% Wind Dir. NNW, Wind Speed 5.8 mph, Conditions Clear
Date and Time:	
Field Temp. 25.3°C	Field pH 7.70

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

October 06, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly R.O. Reject

OrderNo.: 1509219

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509219**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 9/3/2015 9:10:00 AM

Lab ID: 1509219-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	9/18/2015 5:45:40 PM	D28981
Lead	ND	0.00050		mg/L	1	9/18/2015 4:47:06 PM	D28981
Selenium	0.0079	0.0010		mg/L	1	9/18/2015 4:47:06 PM	D28981
Uranium	0.0060	0.00050		mg/L	1	9/18/2015 4:47:06 PM	D28981
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	2.57	0.768		pCi/L	1	9/28/2015	R29271
Radium-226 ±	0.954	0.768		pCi/L	1	9/28/2015	R29271
Radium-228	0.751	0.621		pCi/L	1	9/28/2015	R29271
Radium-228 ±	0.362	0.621		pCi/L	1	9/28/2015	R29271
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.9	2.0		mg/L	20	9/4/2015 11:24:48 PM	R28686
Chloride	260	10		mg/L	20	9/4/2015 11:24:48 PM	R28686
Nitrogen, Nitrate (As N)	1.7	0.10		mg/L	1	9/4/2015 11:12:24 PM	R28686
Sulfate	1800	25		mg/L	50	9/15/2015 12:20:17 AM	R28852
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3440	20.0	*	mg/L	1	9/10/2015 5:38:00 PM	21204
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	9/11/2015	R29271
SM4500-H+B: PH							Analyst: JRR
pH	7.91	1.68	H	pH units	1	9/8/2015 6:28:53 PM	R28726
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Barium	0.058	0.0020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Boron	0.093	0.040		mg/L	1	9/10/2015 3:13:49 PM	B28759
Cadmium	ND	0.0020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Chromium	0.0070	0.0060		mg/L	1	9/11/2015 3:52:52 PM	A28781
Cobalt	ND	0.0060		mg/L	1	9/11/2015 3:52:52 PM	A28781
Copper	ND	0.0060		mg/L	1	9/10/2015 3:13:49 PM	B28759
Iron	ND	0.020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Manganese	ND	0.0020		mg/L	1	9/11/2015 3:52:52 PM	A28781
Molybdenum	ND	0.0080		mg/L	1	9/11/2015 3:52:52 PM	A28781
Nickel	ND	0.010		mg/L	1	9/10/2015 3:13:49 PM	B28759
Silver	ND	0.0050		mg/L	1	9/10/2015 3:13:49 PM	B28759
Zinc	0.021	0.010		mg/L	1	9/11/2015 3:52:52 PM	A28781
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/15/2015 4:16:45 PM	21298

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 9/3/2015 9:10:00 AM

Lab ID: 1509219-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	9/9/2015 3:02:31 PM	21198
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1221	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1232	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1242	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1248	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1254	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1260	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Surr: Decachlorobiphenyl	52.8	17.7-151		%REC	1	9/11/2015 11:45:50 AM	21192
Surr: Tetrachloro-m-xylene	41.2	20.6-151		%REC	1	9/11/2015 11:45:50 AM	21192
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	9/9/2015 5:52:34 PM	21183
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	9/9/2015 5:52:34 PM	21183
Surr: DNOP	115	72-136		%REC	1	9/9/2015 5:52:34 PM	21183
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/10/2015 2:07:41 PM	R28761
Surr: BFB	91.3	57.8-137		%REC	1	9/10/2015 2:07:41 PM	R28761
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	9/11/2015 8:39:09 AM	21193
1-Methylnaphthalene	ND	2.0		µg/L	1	9/11/2015 8:39:09 AM	21193
2-Methylnaphthalene	ND	2.0		µg/L	1	9/11/2015 8:39:09 AM	21193
Benzo(a)pyrene	ND	0.070		µg/L	1	9/11/2015 8:39:09 AM	21193
Surr: Benzo(e)pyrene	49.1	37.2-136		%REC	1	9/11/2015 8:39:09 AM	21193
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Toluene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Ethylbenzene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Carbon Tetrachloride	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Chloroform	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1-Dichloroethane	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1-Dichloroethene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Methylene Chloride	ND	3.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509219**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 9/3/2015 9:10:00 AM

Lab ID: 1509219-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Vinyl chloride	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Xylenes, Total	ND	1.5		µg/L	1	9/8/2015 8:43:58 PM	R28705
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
Surr: 4-Bromofluorobenzene	99.2	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
Surr: Dibromofluoromethane	101	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
Surr: Toluene-d8	94.9	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	9/30/2015	21585

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1509219-002

Matrix: TRIP BLANK

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/10/2015 2:33:01 PM	R28761
Surr: BFB	90.7	57.8-137		%REC	1	9/10/2015 2:33:01 PM	R28761
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Toluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Ethylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Naphthalene	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1-Methylnaphthalene	ND	4.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Methylnaphthalene	ND	4.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Acetone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromodichloromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromoform	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromomethane	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Butanone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Carbon disulfide	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Carbon Tetrachloride	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chloroethane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chloroform	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chloromethane	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Chlorotoluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
4-Chlorotoluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
cis-1,2-DCE	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Dibromochloromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Dibromomethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1-Dichloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1-Dichloroethene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1509219**

Date Reported: **10/6/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1509219-002

Matrix: TRIP BLANK

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2-Dichloropropane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,3-Dichloropropane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2,2-Dichloropropane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Hexachlorobutadiene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Hexanone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Isopropylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
4-Isopropyltoluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
4-Methyl-2-pentanone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Methylene Chloride	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
n-Butylbenzene	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
n-Propylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
sec-Butylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Styrene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
tert-Butylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
trans-1,2-DCE	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Trichlorofluoromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Vinyl chloride	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Xylenes, Total	ND	1.5		µg/L	1	9/8/2015 9:12:38 PM	R28705
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705
Surr: 4-Bromofluorobenzene	96.2	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705
Surr: Dibromofluoromethane	97.9	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705
Surr: Toluene-d8	95.0	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: B28759		RunNo: 28759					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 871972		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.50	0.020	0.5000	0	99.8	85	115			
Barium	0.49	0.0020	0.5000	0	98.9	85	115			
Boron	0.53	0.040	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Copper	0.47	0.0060	0.5000	0	94.2	85	115			
Iron	0.53	0.020	0.5000	0	107	85	115			
Nickel	0.48	0.010	0.5000	0	95.4	85	115			
Silver	0.089	0.0050	0.1000	0	88.8	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B28759		RunNo: 28759					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 871973		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	104	50	150			
Barium	ND	0.0020	0.002000	0	90.0	50	150			
Boron	ND	0.040	0.04000	0	95.7	50	150			
Cadmium	ND	0.0020	0.002000	0	93.5	50	150			
Copper	ND	0.0060	0.006000	0	98.2	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			
Nickel	ND	0.010	0.005000	0	119	50	150			
Silver	ND	0.0050	0.005000	0	86.0	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: B28759			RunNo: 28759					
Prep Date:		Analysis Date: 9/10/2015			SeqNo: 871977		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Copper	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Silver	ND	0.0050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A28781		RunNo: 28781					
Prep Date:			Analysis Date: 9/11/2015		SeqNo: 872822		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	98.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Manganese	0.46	0.0020	0.5000	0	92.4	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.3	85	115			
Zinc	0.49	0.010	0.5000	0	97.9	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A28781		RunNo: 28781					
Prep Date:			Analysis Date: 9/11/2015		SeqNo: 872823		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060	0.006000	0	82.5	50	150			
Cobalt	ND	0.0060	0.006000	0	86.0	50	150			
Manganese	ND	0.0020	0.002000	0	93.0	50	150			
Molybdenum	ND	0.0080	0.008000	0	53.8	50	150			
Zinc	ND	0.010	0.005000	0	103	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: A28781			RunNo: 28781					
Prep Date:		Analysis Date: 9/11/2015			SeqNo: 872843		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Zinc	ND	0.010								

Sample ID	1509219-001IMS		SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	R.O. Reject		Batch ID: A28781		RunNo: 28781					
Prep Date:			Analysis Date: 9/11/2015		SeqNo: 873693		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.47	0.0060	0.5000	0.006970	93.0	70	130			
Cobalt	0.46	0.0060	0.5000	0.004610	91.3	70	130			
Manganese	0.46	0.0020	0.5000	0.0006400	92.4	70	130			
Molybdenum	0.45	0.0080	0.5000	0	89.3	70	130			
Zinc	0.48	0.010	0.5000	0.02073	92.3	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	1509219-001IMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	R.O. Reject	Batch ID:	A28781	RunNo:	28781					
Prep Date:		Analysis Date:	9/11/2015	SeqNo:	873697	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.46	0.0060	0.5000	0.006970	90.9	70	130	2.26	20	
Cobalt	0.45	0.0060	0.5000	0.004610	88.4	70	130	3.15	20	
Manganese	0.45	0.0020	0.5000	0.0006400	89.8	70	130	2.77	20	
Molybdenum	0.43	0.0080	0.5000	0	86.5	70	130	3.20	20	
Zinc	0.47	0.010	0.5000	0.02073	89.6	70	130	2.86	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: D28981		RunNo: 28981					
Prep Date:			Analysis Date: 9/18/2015		SeqNo: 879547		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.7	85	115			
Lead	0.012	0.00050	0.01250	0	94.8	85	115			
Selenium	0.023	0.0010	0.02500	0	91.9	85	115			
Uranium	0.012	0.00050	0.01250	0	94.9	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: D28981		RunNo: 28981					
Prep Date:			Analysis Date: 9/18/2015		SeqNo: 879551		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	92.1	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	ND	0.0010	0.001000	0	95.2	50	150			
Uranium	ND	0.00050	0.0005000	0	99.7	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: D28981			RunNo: 28981					
Prep Date:		Analysis Date: 9/18/2015			SeqNo: 879555		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21298		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 21298		RunNo: 28872					
Prep Date:	9/15/2015		Analysis Date: 9/15/2015		SeqNo: 875782		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-21298		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 21298		RunNo: 28872					
Prep Date:	9/15/2015		Analysis Date: 9/15/2015		SeqNo: 875785		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	95.4	80	120			

Sample ID	1509219-001HMS		SampType: MS		TestCode: EPA Method 245.1: Mercury					
Client ID:	R.O. Reject		Batch ID: 21298		RunNo: 28872					
Prep Date:	9/15/2015		Analysis Date: 9/15/2015		SeqNo: 875801		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	91.4	75	125			

Sample ID	1509219-001HMSD			SampType:	MSD		TestCode:	EPA Method 245.1: Mercury			
Client ID:	R.O. Reject			Batch ID:	21298		RunNo:	28872			
Prep Date:	9/15/2015			Analysis Date:	9/15/2015		SeqNo:	875802		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0047	0.00020	0.005000	0	93.5	75	125	2.30	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28686	RunNo:	28686					
Prep Date:		Analysis Date:	9/4/2015	SeqNo:	869229	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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28686	RunNo:	28686					
Prep Date:		Analysis Date:	9/4/2015	SeqNo:	869230	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	97.5	90	110			
Chloride	4.9	0.50	5.000	0	98.5	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28852	RunNo:	28852					
Prep Date:		Analysis Date:	9/14/2015	SeqNo:	875093	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28852	RunNo:	28852					
Prep Date:		Analysis Date:	9/14/2015	SeqNo:	875094	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.8	0.50	10.00	0	98.4	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21198		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	21198		RunNo:	28723				
Prep Date:	9/9/2015		Analysis Date:	9/9/2015		SeqNo:	870483		Units:		µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-21198		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 21198		RunNo: 28723					
Prep Date:	9/9/2015		Analysis Date: 9/9/2015		SeqNo: 870484		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.078	0.010	0.1000	0	78.0	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21183		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 21183		RunNo: 28717					
Prep Date:	9/8/2015		Analysis Date: 9/9/2015		SeqNo: 870900		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		102	72	136			

Sample ID	LCS-21183		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 21183		RunNo: 28717					
Prep Date:	9/8/2015		Analysis Date: 9/9/2015		SeqNo: 870912		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.52		0.5000		104	72	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R28761	RunNo:	28761					
Prep Date:		Analysis Date:	9/10/2015	SeqNo:	872128	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		90.2	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R28761	RunNo:	28761					
Prep Date:		Analysis Date:	9/10/2015	SeqNo:	872129	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.9	80	120			
Surr: BFB	19		20.00		94.5	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21192	SampType: MBLK		TestCode: EPA Method 8082: PCB's						
Client ID:	PBW	Batch ID: 21192		RunNo: 28758						
Prep Date:	9/9/2015	Analysis Date: 9/11/2015		SeqNo: 872597		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.6		2.500		62.8	17.7	151			
Surr: Tetrachloro-m-xylene	1.3		2.500		50.4	20.6	151			

Sample ID	LCS-21192		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 21192		RunNo: 28758					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 873603		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.2	1.0	5.000	0	44.8	9.01	142			
Aroclor 1260	3.3	1.0	5.000	0	65.3	25.6	164			
Surr: Decachlorobiphenyl	1.4		2.500		58.0	17.7	151			
Surr: Tetrachloro-m-xylene	1.3		2.500		52.0	20.6	151			

Sample ID	LCSD-21192		SampType: LCSD		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02		Batch ID: 21192		RunNo: 28758					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 873604		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.0	1.0	5.000	0	39.0	9.01	142	13.7	26.9	
Aroclor 1260	3.0	1.0	5.000	0	59.2	25.6	164	9.84	29.1	
Surr: Decachlorobiphenyl	1.3		2.500		53.2	17.7	151	0	0	
Surr: Tetrachloro-m-xylene	1.1		2.500		42.8	20.6	151	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R28705			RunNo: 28705					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870016		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	24	1.0	20.00	0	120	70	130			
Toluene	23	1.0	20.00	0	115	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	26	1.0	20.00	0	129	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.8	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.4	70	130			
Surr: Toluene-d8	9.2		10.00		92.1	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28705			RunNo: 28705					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870017		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28705			RunNo: 28705					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870017	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R28705	RunNo:	28705					
Prep Date:		Analysis Date:	9/8/2015	SeqNo:	870017	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.8	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.7	70	130			
Surr: Toluene-d8	9.5		10.00		94.9	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21193		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	21193		RunNo:	28760			
Prep Date:	9/9/2015		Analysis Date:	9/11/2015		SeqNo:	872124	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	7.7		20.00		38.7	37.2	136			

Sample ID	LCS-21193		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	21193		RunNo:	28760			
Prep Date:	9/9/2015		Analysis Date:	9/11/2015		SeqNo:	872224	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	60	2.0	80.00	0	74.8	57.8	83.9			
1-Methylnaphthalene	60	2.0	80.20	0	75.2	43.5	88.5			
2-Methylnaphthalene	60	2.0	80.00	0	74.6	34.2	94.5			
Benzo(a)pyrene	0.38	0.070	0.5020	0	75.7	56.3	98.6			
Surr: Benzo(e)pyrene	9.9		20.00		49.3	37.2	136			

Sample ID	LCSD-21193		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	21193		RunNo:	28760			
Prep Date:	9/9/2015		Analysis Date:	9/11/2015		SeqNo:	872225	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	59	2.0	80.00	0	73.6	57.8	83.9	1.55	20	
1-Methylnaphthalene	59	2.0	80.20	0	73.8	43.5	88.5	1.94	20	
2-Methylnaphthalene	58	2.0	80.00	0	72.8	34.2	94.5	2.46	20	
Benzo(a)pyrene	0.37	0.070	0.5020	0	73.7	56.3	98.6	2.67	20	
Surr: Benzo(e)pyrene	9.3		20.00		46.4	37.2	136	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21585		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 21585		RunNo: 29183					
Prep Date:	9/30/2015		Analysis Date: 9/30/2015		SeqNo: 886370		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-21585		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	21585		RunNo:	29183				
Prep Date:	9/30/2015		Analysis Date:	9/30/2015		SeqNo:	886371		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	17	2.5	20.00	0	83.6	64.4	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R29271		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R29271		RunNo:	29271				
Prep Date:			Analysis Date:	9/11/2015		SeqNo:	889329		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R29271			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R29271		RunNo:	29271			
Prep Date:				Analysis Date:	9/11/2015		SeqNo:	889330	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.462		0.5000	0	92.4	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#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R29271	SampType: MBLK			TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID: R29271			RunNo: 29271					
Prep Date:		Analysis Date: 9/28/2015			SeqNo: 889332		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.461	0.612								
Radium-226 ±	0.431	0.612								
Radium-228	0.202	0.549								
Radium-228 ±	0.259	0.549								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21204		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	21204		RunNo:	28757				
Prep Date:	9/9/2015		Analysis Date:	9/10/2015		SeqNo:	871932		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-21204		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21204		RunNo: 28757					
Prep Date:	9/9/2015		Analysis Date: 9/10/2015		SeqNo: 871933		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	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: NAVAJO REFINING CO

Work Order Number: 1509219

RcptNo: 1

Received by/date: LM 09/04/15

Logged By: Celina Sessa 9/4/2015 10:20:00 AM

Completed By: Celina Sessa 9/4/2015 1:36:01 PM

Reviewed By:

Celina Sessa
Celina Sessa
09/04/15

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? 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: *06/1*
<2 or >12 unless noted
 Adjusted? *NO*
 Checked by: *mg*

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	3.3	Good	Yes			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars

Parts / Sample Intervals	
One	

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salisbury
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	9/3/2015 @ 9:06
End Date and Time	8/3/2015 @ 9:20

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Preservatives											Analysis and/or Method Requested pH, Cl, F, SO4, NO2/NO3, TDS
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	
1	500ml	Plastic	2	X			X				8015 GRO
2	40ml	VOA	3		X						6020 total metals, 7470 Hg
3	500ml	Plastic	1			X					6020 Dissolved Metals
4	125ml	Plastic	1			X					Cyanide
5	500ml	Plastic	2					X			Radium 226/228
6	1L	Plastic	3			X					8260 see attached list
7	40ml	VOA	2		X						8270 see attached list
8	1L	Glass	1	X							8082 PCBs
9	1L	Glass	2	X							8015 DRO
10	40ml	VOA	2	X							Radium 226/228
11	40ml	VOA	2		X						

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Field Data (Weather, Observations, Etc):	9/3/2015 Temp. 78.6 °F, Humidity 44%, Wind Dir. North, Wind Speed 8.1 mph, Conditions Clear
Date and Time:	
Field Temp. 25.5°C	Field pH 7.72

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



September 15, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – August 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's September 2015 monthly report, for the period of August 1-31, under the Order.

Specifically, this report covers the August 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire August reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from August 1 through August 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from August 1 through August 31.

Navajo has calculated a penalty of \$3,100 for August 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 31 days in August. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on August 3, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo has conducted a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels. Navajo submitted the associated background groundwater concentration report to OCD on September 2, 2015.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015.

Navajo has completed the public notice requirements set forth in 20.6.2.3108B New Mexico Administrative Code (NMAC) regarding public notice of the permit modification request. Mailings were sent to adjacent landowners within a 1/3 mile radius of the property, signs have been posted near the discharge location (Richey Avenue) and at the Refinery offices, and the notice has been published in the *Artesia Daily Press*. Navajo submitted proof of completion of the public notice, including an affidavit of mailing and the list of property owners, proof of publication, and an affidavit of posting, to the OCD on September 3, 2015.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
8/1/2015	129	132	261	8,949	62	2,131	11,080
8/2/2015	132	107	239	8,194	63	2,160	10,354
8/3/2015	136	126	262	8,983	63	2,166	11,149
8/4/2015	134	127	261	8,949	62	2,134	11,083
8/5/2015	135	129	264	9,051	60	2,061	11,112
8/6/2015	136	126	262	8,983	59	2,033	11,016
8/7/2015	138	121	259	8,880	56	1,904	10,784
8/8/2015	137	133	270	9,257	45	1,539	10,796
8/9/2015	134	126	260	8,914	48	1,641	10,555
8/10/2015	137	133	270	9,257	57	1,961	11,218
8/11/2015	135	126	261	8,949	58	2,001	10,950
8/12/2015	132	121	253	8,674	49	1,680	10,354
8/13/2015	143	128	271	9,291	56	1,906	11,197
8/14/2015	135	120	255	8,743	58	1,993	10,736
8/15/2015	143	131	274	9,394	48	1,659	11,053
8/16/2015	134	130	264	9,051	44	1,509	10,560
8/17/2015	131	130	261	8,949	47	1,601	10,550
8/18/2015	129	124	253	8,674	57	1,960	10,634
8/19/2015	134	129	263	9,017	56	1,928	10,945
8/20/2015	134	129	263	9,017	56	1,935	10,952
8/21/2015	134	121	255	8,743	56	1,928	10,671
8/22/2015	132	131	263	9,017	57	1,948	10,965
8/23/2015	135	129	264	9,051	57	1,966	11,017
8/24/2015	136	131	267	9,154	58	1,979	11,133
8/25/2015	131	124	255	8,743	57	1,939	10,682
8/26/2015	130	128	258	8,846	56	1,924	10,770
8/27/2015	128	118	246	8,434	57	1,941	10,375
8/28/2015	129	128	257	8,811	52	1,775	10,586
8/29/2015	118	127	245	8,400	47	1,624	10,024
8/30/2015	132	129	261	8,949	48	1,648	10,597
8/31/2015	131	125	256	8,777	55	1,885	10,662

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - August 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	31	\$3,100
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$3,100

Attachment 3
Analytical Lab Report



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

August 26, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary R.O. Reject

OrderNo.: 1508063

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 8/3/2015 9:30:00 AM

Lab ID: 1508063-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	8/12/2015 8:39:59 PM	D28151
Copper	0.0037	0.0010		mg/L	1	8/19/2015 1:30:00 PM	B28323
Lead	ND	0.00050		mg/L	1	8/12/2015 8:19:49 PM	D28151
Selenium	0.0086	0.0050		mg/L	5	8/12/2015 8:39:59 PM	D28151
Uranium	0.0070	0.00050		mg/L	1	8/12/2015 8:19:49 PM	D28151
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.27	0.620		pCi/L	1	8/18/2015	R28452
Radium-226 ±	0.644	0.620		pCi/L	1	8/18/2015	R28452
Radium-228	0.571	0.712		pCi/L	1	8/18/2015	R28452
Radium-228 ±	0.375	0.712		pCi/L	1	8/18/2015	R28452
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.6	0.10		mg/L	1	8/4/2015 2:39:23 PM	R27968
Chloride	320	10		mg/L	20	8/4/2015 3:16:37 PM	R27968
Sulfate	1900	50		mg/L	100	8/14/2015 3:34:40 AM	R28192
Nitrate+Nitrite as N	1.7	1.0		mg/L	5	8/14/2015 4:24:18 AM	R28192
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4000	20.0	*	mg/L	1	8/6/2015 5:55:00 PM	20614
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	8/12/2015	R28452
SM4500-H+B: PH							Analyst: JRR
pH	8.04	1.68	H	pH units	1	8/6/2015 8:07:28 PM	R28029
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Barium	0.076	0.0020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Boron	0.093	0.040		mg/L	1	8/5/2015 9:48:22 PM	R27986
Cadmium	ND	0.0020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Chromium	ND	0.0060		mg/L	1	8/5/2015 9:48:22 PM	R27986
Cobalt	ND	0.0060		mg/L	1	8/5/2015 9:48:22 PM	R27986
Iron	ND	0.020		mg/L	1	8/7/2015 2:05:37 PM	R28044
Manganese	0.0094	0.0020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Molybdenum	0.0082	0.0080		mg/L	1	8/5/2015 9:48:22 PM	R27986
Nickel	ND	0.010		mg/L	1	8/5/2015 9:48:22 PM	R27986
Silver	ND	0.0050		mg/L	1	8/5/2015 9:48:22 PM	R27986
Zinc	0.053	0.010		mg/L	1	8/6/2015 3:42:35 PM	C28013
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/7/2015 2:01:54 PM	20665

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 8/3/2015 9:30:00 AM

Lab ID: 1508063-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/4/2015 8:14:29 PM	R27954
Surr: BFB	99.9	70-130		%REC	1	8/4/2015 8:14:29 PM	R27954
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	8/7/2015 12:08:21 PM	20627
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1221	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1232	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1242	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1248	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1254	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1260	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Surr: Decachlorobiphenyl	92.0	44.5-110		%REC	1	8/10/2015 9:50:46 AM	20661
Surr: Tetrachloro-m-xylene	113	31.8-95.7	S	%REC	1	8/10/2015 9:50:46 AM	20661
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/5/2015 10:39:12 PM	20617
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/5/2015 10:39:12 PM	20617
Surr: DNOP	98.5	72-136		%REC	1	8/5/2015 10:39:12 PM	20617
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	8/10/2015 9:22:01 AM	20677
1-Methylnaphthalene	ND	2.0		µg/L	1	8/10/2015 9:22:01 AM	20677
2-Methylnaphthalene	ND	2.0		µg/L	1	8/10/2015 9:22:01 AM	20677
Benzo(a)pyrene	ND	0.070		µg/L	1	8/10/2015 9:22:01 AM	20677
Surr: Benzo(e)pyrene	48.7	37.2-136		%REC	1	8/10/2015 9:22:01 AM	20677
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Toluene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Ethylbenzene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Carbon Tetrachloride	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Chloroform	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1-Dichloroethane	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1-Dichloroethene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Methylene Chloride	ND	3.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 8/3/2015 9:30:00 AM

Lab ID: 1508063-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Vinyl chloride	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Xylenes, Total	ND	1.5		µg/L	1	8/4/2015 5:33:38 PM	R27952
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
Surr: Dibromofluoromethane	98.4	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
Surr: Toluene-d8	90.6	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	8/6/2015	20629

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1508063-002

Matrix: TRIP BLANK

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/4/2015 8:42:06 PM	R27954
Surr: BFB	99.0	70-130		%REC	1	8/4/2015 8:42:06 PM	R27954
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Toluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Ethylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Naphthalene	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1-Methylnaphthalene	ND	4.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Methylnaphthalene	ND	4.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Acetone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromodichloromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromoform	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromomethane	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Butanone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Carbon disulfide	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Carbon Tetrachloride	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chloroethane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chloroform	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chloromethane	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Chlorotoluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
4-Chlorotoluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
cis-1,2-DCE	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Dibromochloromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Dibromomethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1-Dichloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1-Dichloroethene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952

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

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

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Lab Order 1508063

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1508063-002

Matrix: TRIP BLANK

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2-Dichloropropane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,3-Dichloropropane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2,2-Dichloropropane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1-Dichloropropene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Hexachlorobutadiene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Hexanone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Isopropylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
4-Isopropyltoluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
4-Methyl-2-pentanone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Methylene Chloride	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
n-Butylbenzene	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
n-Propylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
sec-Butylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Styrene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
tert-Butylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
trans-1,2-DCE	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Trichlorofluoromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Vinyl chloride	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Xylenes, Total	ND	1.5		µg/L	1	8/4/2015 6:02:20 PM	R27952
Surr: 1,2-Dichloroethane-d4	97.6	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952
Surr: 4-Bromofluorobenzene	98.2	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952
Surr: Dibromofluoromethane	95.9	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952
Surr: Toluene-d8	89.0	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842241	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842242	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	104	85	115			
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.6	85	115			
Manganese	0.48	0.0020	0.5000	0	95.6	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	99.7	85	115			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842243	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	115	50	150			
Barium	ND	0.0020	0.002000	0	85.0	50	150			
Boron	ND	0.040	0.04000	0	97.3	50	150			
Cadmium	ND	0.0020	0.002000	0	95.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	ND	0.0060	0.006000	0	99.3	50	150			
Manganese	0.0026	0.0020	0.002000	0	131	50	150			
Molybdenum	0.0087	0.0080	0.008000	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986						
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842243	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nickel	ND	0.010	0.005000	0	93.4	50	150				
Silver	ND	0.0050	0.005000	0	93.8	50	150				

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	PBW	Batch ID:	R27986	RunNo:	27986						
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842244	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aluminum	ND	0.020									
Barium	ND	0.0020									
Boron	ND	0.040									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Cobalt	ND	0.0060									
Manganese	ND	0.0020									
Molybdenum	ND	0.0080									
Nickel	ND	0.010									
Silver	ND	0.0050									

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	LCSW	Batch ID:	R27986	RunNo:	27986						
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842245	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aluminum	0.52	0.020	0.5000	0	103	85	115				
Barium	0.50	0.0020	0.5000	0	99.0	85	115				
Boron	0.51	0.040	0.5000	0	103	85	115				
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115				
Chromium	0.49	0.0060	0.5000	0	98.2	85	115				
Cobalt	0.47	0.0060	0.5000	0	94.6	85	115				
Manganese	0.48	0.0020	0.5000	0	96.3	85	115				
Molybdenum	0.51	0.0080	0.5000	0	103	85	115				
Nickel	0.47	0.010	0.5000	0	94.8	85	115				
Silver	0.10	0.0050	0.1000	0	100	85	115				

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986						
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842246	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842246	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	112	50	150			
Barium	ND	0.0020	0.002000	0	98.5	50	150			
Boron	ND	0.040	0.04000	0	99.7	50	150			
Cadmium	ND	0.0020	0.002000	0	77.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	99.8	50	150			
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Molybdenum	0.0093	0.0080	0.008000	0	116	50	150			
Nickel	ND	0.010	0.005000	0	97.4	50	150			
Silver	ND	0.0050	0.005000	0	95.4	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	C28013	RunNo:	28013					
Prep Date:		Analysis Date:	8/6/2015	SeqNo:	843253	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: Dissolved Metals					
Client ID:	LCSW	Batch ID:	C28013	RunNo:	28013					
Prep Date:		Analysis Date:	8/6/2015	SeqNo:	843254	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.50	0.010	0.5000	0	101	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	C28013	RunNo:	28013					
Prep Date:		Analysis Date:	8/6/2015	SeqNo:	843255	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010	0.005000	0	128	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844435	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	LCSW	Batch ID:	R28044	RunNo:	28044						
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844436	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron		0.51	0.020	0.5000	0	102	85	115			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	BatchQC	Batch ID:	R28044	RunNo:	28044						
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844437	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron		0.026	0.020	0.02000	0	131	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	PBW	Batch ID:	R28044	RunNo:	28044						
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844438	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron		ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	LCSW	Batch ID:	R28044	RunNo:	28044						
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844439	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron		0.49	0.020	0.5000	0	99.0	85	115			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	BatchQC	Batch ID:	R28044	RunNo:	28044						
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844440	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron		0.020	0.020	0.02000	0	101	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 | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: D28151		RunNo: 28151					
Prep Date:			Analysis Date: 8/12/2015		SeqNo: 848117		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			
Lead	0.012	0.00050	0.01250	0	99.4	85	115			
Selenium	0.025	0.0010	0.02500	0	99.7	85	115			
Uranium	0.012	0.00050	0.01250	0	98.6	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: D28151		RunNo: 28151					
Prep Date:			Analysis Date: 8/12/2015		SeqNo: 848119		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	104	50	150			
Lead	0.00052	0.00050	0.0005000	0	105	50	150			
Selenium	0.0010	0.0010	0.001000	0	105	50	150			
Uranium	0.00053	0.00050	0.0005000	0	105	50	150			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW		Batch ID:	D28151		RunNo:	28151				
Prep Date:			Analysis Date:	8/12/2015		SeqNo:	848122		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									
Uranium	ND	0.00050									

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B28323		RunNo: 28323					
Prep Date:			Analysis Date: 8/19/2015		SeqNo: 855090		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	95.4	85	115			

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID:	B28323		RunNo:	28323				
Prep Date:			Analysis Date:	8/19/2015		SeqNo:	855092		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Copper	ND	0.0010	0.001000	0	91.5	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	B28323	RunNo:	28323					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855094	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-20665	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	20665	RunNo:	28038					
Prep Date:	8/7/2015	Analysis Date:	8/7/2015	SeqNo:	844199	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20665	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	20665	RunNo:	28038					
Prep Date:	8/7/2015	Analysis Date:	8/7/2015	SeqNo:	844200	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	99.8	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	1508063-001EMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	Temporary R.O. Rej	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841509	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.9	0.10	0.5000	3.578	64.8	75.3	111			S

Sample ID	1508063-001EMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	Temporary R.O. Rej	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841510	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.8	0.10	0.5000	3.578	47.8	75.3	111	2.20	20	S

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	841566	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:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	841567	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28192	RunNo:	28192					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849498	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28192	RunNo:	28192					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849499	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.0	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20627	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844775	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20627	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844776	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	110	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS-20617		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 20617		RunNo: 27957					
Prep Date:	8/5/2015		Analysis Date: 8/5/2015		SeqNo: 842448		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.9	1.0	5.000	0	118	60.1	156			
Surr: DNOP	0.52		0.5000		104	72	136			

Sample ID	1508063-001KMS		SampType:	MS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	Temporary R.O. Rej		Batch ID:	20617		RunNo:	27957				
Prep Date:	8/5/2015		Analysis Date:	8/5/2015		SeqNo:	842451		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	116	75.9	164				
Surr: DNOP	0.51		0.5000		103	72	136				

Sample ID	1508063-001KMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	Temporary R.O. Rej		Batch ID:	20617		RunNo:	27957				
Prep Date:	8/5/2015		Analysis Date:	8/5/2015		SeqNo:	842452		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	75.9	164	3.46	22.1		
Surr: DNOP	0.51		0.5000		101	72	136	0	0		

Sample ID	MB-20617		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	20617		RunNo:	27957				
Prep Date:	8/5/2015		Analysis Date:	8/5/2015		SeqNo:	842468		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	0.95		1.000		95.5	72	136				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20661		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 20661		RunNo: 28049					
Prep Date:	8/7/2015		Analysis Date: 8/10/2015		SeqNo: 845110		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.6	44.5	110			
Surr: Tetrachloro-m-xylene	2.3		2.500		90.4	31.8	95.7			

Sample ID	LCS-20661		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 20661		RunNo: 28049					
Prep Date:	8/7/2015		Analysis Date: 8/10/2015		SeqNo: 845133		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	5.9	1.0	5.000	0	117	9.01	142			
Aroclor 1260	6.0	1.0	5.000	0	119	25.6	164			
Surr: Decachlorobiphenyl	2.2		2.500		89.2	44.5	110			
Surr: Tetrachloro-m-xylene	2.7		2.500		107	31.8	95.7			S

Sample ID	1508063-001DMS		SampType:	MS		TestCode:	EPA Method 8082: PCB's				
Client ID:	Temporary R.O. Rej		Batch ID:	20661		RunNo:	28049				
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845724		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aroclor 1016	4.7	1.0	5.000	0	94.4	14.5	105				
Aroclor 1260	5.7	1.0	5.000	0	113	21.4	125				
Surr: Decachlorobiphenyl	2.4		2.500		96.4	44.5	110				
Surr: Tetrachloro-m-xylene	2.8		2.500		112	31.8	95.7			S	

Sample ID	1508063-001DMSD		SampType:	MSD		TestCode:	EPA Method 8082: PCB's				
Client ID:	Temporary R.O. Rej		Batch ID:	20661		RunNo:	28049				
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845725		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aroclor 1016	4.3	1.0	5.000	0	86.6	14.5	105	8.66	20		
Aroclor 1260	5.2	1.0	5.000	0	104	21.4	125	8.17	27.6		
Surr: Decachlorobiphenyl	2.2		2.500		88.8	44.5	110	0	0		
Surr: Tetrachloro-m-xylene	2.5		2.500		100	31.8	95.7	0	0	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R27954		RunNo: 27954							
Prep Date:	Analysis Date: 8/4/2015		SeqNo: 841101		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.9		10.00		98.6	70	130			

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R27954		RunNo: 27954							
Prep Date:	Analysis Date: 8/4/2015		SeqNo: 841102		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		99.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.5		10.00		95.2	70	130			

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R27952		RunNo: 27952							
Prep Date:	Analysis Date: 8/4/2015		SeqNo: 841117		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	20	1.0	20.00	0	101	70	130			
Chlorobenzene	19	1.0	20.00	0	93.8	70	130			
1,1-Dichloroethene	25	1.0	20.00	0	127	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	111	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID VSb deli	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R27952		RunNo: 27952							
Prep Date:	Analysis Date: 8/4/2015		SeqNo: 841118		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								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	VSB deli	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R27952		RunNo: 27952						
Prep Date:		Analysis Date: 8/4/2015		SeqNo: 841118		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								

Qualifiers:

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- D Sample Diluted Due to Matrix
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- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	VSB deli	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27952	RunNo:	27952					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841118	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		103	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		96.3	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	20677		RunNo:	28051			
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	844835		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	14		20.00		68.8	37.2	136			

Sample ID	LCS-20677		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	20677		RunNo:	28051			
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	845107		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.4	57.8	83.9			S
1-Methylnaphthalene	74	2.0	80.20	0	91.8	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	89.4	34.2	94.5			
Benzo(a)pyrene	0.44	0.070	0.5020	0	87.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.8	37.2	136			

Sample ID	1508063-001DMS		SampType:	MS		TestCode:	EPA Method 8310: PAHs			
Client ID:	Temporary R.O. Rej		Batch ID:	20677		RunNo:	28051			
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	845141		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	63	2.0	80.00	0	78.8	21.6	109			
1-Methylnaphthalene	64	2.0	80.20	0	79.7	15.8	102			
2-Methylnaphthalene	62	2.0	80.00	0	78.0	11.4	99			
Benzo(a)pyrene	0.40	0.070	0.5020	0	79.7	25	123			
Surr: Benzo(e)pyrene	13		20.00		67.3	37.2	136			

Sample ID	1508063-001DMSD		SampType:	MSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	Temporary R.O. Rej		Batch ID:	20677		RunNo:	28051			
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	845142		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	54	2.0	80.00	0	67.5	21.6	109	15.5	20	
1-Methylnaphthalene	55	2.0	80.20	0	68.8	15.8	102	14.7	20	
2-Methylnaphthalene	54	2.0	80.00	0	67.6	11.4	99	14.3	20	
Benzo(a)pyrene	0.34	0.070	0.5020	0	67.7	25	123	16.2	20	
Surr: Benzo(e)pyrene	12		20.00		58.0	37.2	136	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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20629	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842690	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-20629	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842691	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	104	64.4	135			

Sample ID	LCSD-20629	SampType:	LCSD	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSS02	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842692	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	64.4	135	12.7	21.4	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-R28452	SampType:	MBLK	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	PBW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	859841	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	LCS-R28452	SampType:	LCS	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	859842	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.521		0.5000	0	104	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R27954	RunNo:	27954					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841369	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		101	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R27954	RunNo:	27954					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841371	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	80.6	122			
Surr: BFB	9.9		10.00		99.4	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R28452		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed				
Client ID:	PBW		Batch ID:	R28452		RunNo:	28452				
Prep Date:			Analysis Date:	8/18/2015		SeqNo:	859845		Units: pCi/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Radium-226	ND	0.551									
Radium-226 ±	0.342	0.551									
Radium-228	0.014	0.860									
Radium-228 ±	0.371	0.860									

Sample ID	MB-R28452		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed				
Client ID:	PBW		Batch ID:	R28452		RunNo:	28452				
Prep Date:			Analysis Date:	8/18/2015		SeqNo:	859847		Units: pCi/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Radium-226	0.556	0.599									
Radium-226 ±	0.441	0.599									
Radium-228	0.314	0.882									
Radium-228 ±	0.412	0.882									

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

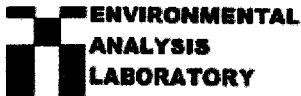
Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20614	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	20614	RunNo:	28014					
Prep Date:	8/5/2015	Analysis Date:	8/6/2015	SeqNo:	843310	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20614	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	20614	RunNo:	28014					
Prep Date:	8/5/2015	Analysis Date:	8/6/2015	SeqNo:	843311	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |



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 **NAVAJO REFINING CO**

Work Order Number: **1508063**

RcptNo: 1

Received by/date:

CS

08/04/15

Logged By **Ashley Gallegos**

8/4/2015 9:13:00 AM

Completed By: **Ashley Gallegos**

8/4/2015 9:27:44 AM

Reviewed By:

CS

08/04/15

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? 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: 6 or 12 (unless noted)
- Adjusted? ☐
- Checked by: JA

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	5.2	Good	Not Present			



Navajo Refining Company, LLC
901 E. Main
Artesia, NM 88210
(Tel) 575 748 3311
(Fax) 575 746 5451

Monthly RO Reject Sample Details Attachment



HOLLYFRONTIER

The HollyFrontier Companies

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	8/3/2015 @ 08:25
End Date and Time	8/3/2015 @ 9:41

Parts / Sample Intervals	One
--------------------------	-----

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Preservatives						Analysis and/or Method Requested
				HCl	HNO3	H2SO4	NaOH	Na2S2O3	NaH-BO4	
1	500ml	Plastic	2	X		X				pH, Cl F, SO4, NO2/NO3, TDS
2	40ml	VOA	3	X						8015 GRO
3	500ml	Plastic	1		X					6020 total metals, 7470 Hg
4	125ml	Plastic	1		X					6020 Dissolved Metals
5	500ml	Plastic	2				X			Cyanide
6	1L	Plastic	3		X					Radium 226/228
7	40ml	VOA	2	X						8260 see attached list
8	1L	Glass	1	X						8270 see attached list
9	1L	Glass	2	X						8082 PCBs
10	40ml	VOA	2	X						8015 DRC
11	40ml	VOA	2	X						Radium 226/228

Field Date (Weather, Observations, Etc.)	8/3/2015 Temp: 80.6 °F, Humidity 58%, Wind Dr. NW, Wind Speed 4.6 mph, Conditions Clear
--	---

Date and Time:	Field Temp: 26.1°C Field pH: 7.77
----------------	-----------------------------------

Storage Method	Ice <input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	Ice <input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

August 26, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly R.O. Reject

OrderNo.: 1508065

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508065

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 8/3/2015 10:10:00 AM

Lab ID: 1508065-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	8/12/2015 8:24:51 PM	D28151
Lead	ND	0.00050		mg/L	1	8/11/2015 9:43:20 PM	R28115
Selenium	0.0067	0.0010		mg/L	1	8/11/2015 9:43:20 PM	R28115
Uranium	0.0047	0.00050		mg/L	1	8/11/2015 9:43:20 PM	R28115
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.144	0.867		pCi/L	1	8/18/2015	R28452
Radium-226 ±	0.448	0.867		pCi/L	1	8/18/2015	R28452
Radium-228	0.151	0.690		pCi/L	1	8/18/2015	R28452
Radium-228 ±	0.313	0.690		pCi/L	1	8/18/2015	R28452
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.4	0.10		mg/L	1	8/4/2015 7:37:13 PM	R27968
Chloride	230	10		mg/L	20	8/4/2015 7:49:37 PM	R27968
Nitrogen, Nitrate (As N)	1.6	0.10		mg/L	1	8/4/2015 7:37:13 PM	R27968
Sulfate	1400	25		mg/L	50	8/14/2015 3:09:51 AM	R28192
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2860	20.0	*	mg/L	1	8/6/2015 8:33:00 PM	20626
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	8/12/2015	R28452
SM4500-H+B: PH							Analyst: JRR
pH	8.09	1.68	H	pH units	1	8/6/2015 8:11:30 PM	R28029
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	8/5/2015 9:52:54 PM	R27986
Barium	0.056	0.0020		mg/L	1	8/5/2015 9:52:54 PM	R27986
Boron	0.083	0.040		mg/L	1	8/5/2015 9:52:54 PM	R27986
Cadmium	ND	0.0020		mg/L	1	8/5/2015 9:52:54 PM	R27986
Chromium	ND	0.0060		mg/L	1	8/5/2015 9:52:54 PM	R27986
Cobalt	ND	0.0060		mg/L	1	8/5/2015 9:52:54 PM	R27986
Copper	ND	0.0060		mg/L	1	8/6/2015 3:44:28 PM	C28013
Iron	ND	0.020		mg/L	1	8/7/2015 2:07:43 PM	R28044
Manganese	ND	0.0020		mg/L	1	8/5/2015 9:52:54 PM	R27986
Molybdenum	ND	0.0080		mg/L	1	8/5/2015 9:52:54 PM	R27986
Nickel	ND	0.010		mg/L	1	8/5/2015 9:52:54 PM	R27986
Silver	ND	0.0050		mg/L	1	8/5/2015 9:52:54 PM	R27986
Zinc	0.051	0.010		mg/L	1	8/6/2015 3:44:28 PM	C28013
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/7/2015 2:04:07 PM	20665

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508065

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 8/3/2015 10:10:00 AM

Lab ID: 1508065-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	0.072	0.050		mg/L	1	8/5/2015 8:34:25 PM	R27991
Surr: BFB	103	70-130		%REC	1	8/5/2015 8:34:25 PM	R27991
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	8/7/2015 12:22:21 PM	20627
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Aroclor 1221	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Aroclor 1232	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Aroclor 1242	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Aroclor 1248	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Aroclor 1254	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Aroclor 1260	ND	1.0		µg/L	1	8/10/2015 12:08:32 PM	20661
Surr: Decachlorobiphenyl	90.0	44.5-110		%REC	1	8/10/2015 12:08:32 PM	20661
Surr: Tetrachloro-m-xylene	108	31.8-95.7	S	%REC	1	8/10/2015 12:08:32 PM	20661
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/5/2015 11:43:27 PM	20617
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/5/2015 11:43:27 PM	20617
Surr: DNOP	102	72-136		%REC	1	8/5/2015 11:43:27 PM	20617
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	8/10/2015 10:49:51 AM	20677
1-Methylnaphthalene	ND	2.0		µg/L	1	8/10/2015 10:49:51 AM	20677
2-Methylnaphthalene	ND	2.0		µg/L	1	8/10/2015 10:49:51 AM	20677
Benzo(a)pyrene	ND	0.070		µg/L	1	8/10/2015 10:49:51 AM	20677
Surr: Benzo(e)pyrene	75.6	37.2-136		%REC	1	8/10/2015 10:49:51 AM	20677
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Toluene	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Ethylbenzene	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Carbon Tetrachloride	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Chloroform	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
1,1-Dichloroethane	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
1,1-Dichloroethene	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Methylene Chloride	ND	3.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order 1508065

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company**Client Sample ID:** R.O. Reject**Project:** Monthly R.O. Reject**Collection Date:** 8/3/2015 10:10:00 AM**Lab ID:** 1508065-001**Matrix:** AQUEOUS**Received Date:** 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Vinyl chloride	ND	1.0		µg/L	1	8/5/2015 8:34:25 PM	R27991
Xylenes, Total	ND	1.5		µg/L	1	8/5/2015 8:34:25 PM	R27991
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%REC	1	8/5/2015 8:34:25 PM	R27991
Surr: 4-Bromofluorobenzene	112	70-130		%REC	1	8/5/2015 8:34:25 PM	R27991
Surr: Dibromofluoromethane	107	70-130		%REC	1	8/5/2015 8:34:25 PM	R27991
Surr: Toluene-d8	104	70-130		%REC	1	8/5/2015 8:34:25 PM	R27991
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	8/6/2015	20629

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508065

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1508065-002

Matrix: TRIP BLANK

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/5/2015 9:02:06 PM	R27991
Surr: BFB	97.5	70-130		%REC	1	8/5/2015 9:02:06 PM	R27991
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	8/7/2015 1:04:28 PM	20627
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Toluene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Ethylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Naphthalene	ND	2.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1-Methylnaphthalene	ND	4.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
2-Methylnaphthalene	ND	4.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Acetone	ND	10		µg/L	1	8/5/2015 9:02:06 PM	R27991
Bromobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Bromodichloromethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Bromoform	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Bromomethane	ND	3.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
2-Butanone	ND	10		µg/L	1	8/5/2015 9:02:06 PM	R27991
Carbon disulfide	ND	10		µg/L	1	8/5/2015 9:02:06 PM	R27991
Carbon Tetrachloride	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Chlorobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Chloroethane	ND	2.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Chloroform	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Chloromethane	ND	3.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
2-Chlorotoluene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
4-Chlorotoluene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
cis-1,2-DCE	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Dibromochloromethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Dibromomethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508065

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1508065-002

Matrix: TRIP BLANK

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1-Dichloroethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1-Dichloroethene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2-Dichloropropane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,3-Dichloropropane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
2,2-Dichloropropane	ND	2.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1-Dichloropropene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Hexachlorobutadiene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
2-Hexanone	ND	10		µg/L	1	8/5/2015 9:02:06 PM	R27991
Isopropylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
4-Isopropyltoluene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
4-Methyl-2-pentanone	ND	10		µg/L	1	8/5/2015 9:02:06 PM	R27991
Methylene Chloride	ND	3.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
n-Butylbenzene	ND	3.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
n-Propylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
sec-Butylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Styrene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
tert-Butylbenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
trans-1,2-DCE	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Trichlorofluoromethane	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Vinyl chloride	ND	1.0		µg/L	1	8/5/2015 9:02:06 PM	R27991
Xylenes, Total	ND	1.5		µg/L	1	8/5/2015 9:02:06 PM	R27991
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	8/5/2015 9:02:06 PM	R27991
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/5/2015 9:02:06 PM	R27991
Surr: Dibromofluoromethane	109	70-130		%REC	1	8/5/2015 9:02:06 PM	R27991
Surr: Toluene-d8	102	70-130		%REC	1	8/5/2015 9:02:06 PM	R27991

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample 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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: R27986		RunNo: 27986							
Prep Date:	Analysis Date: 8/5/2015		SeqNo: 842241		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: R27986		RunNo: 27986							
Prep Date:	Analysis Date: 8/5/2015		SeqNo: 842242		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	104	85	115			
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.6	85	115			
Manganese	0.48	0.0020	0.5000	0	95.6	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	99.7	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: R27986		RunNo: 27986							
Prep Date:	Analysis Date: 8/5/2015		SeqNo: 842243		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	115	50	150			
Barium	ND	0.0020	0.002000	0	85.0	50	150			
Boron	ND	0.040	0.04000	0	97.3	50	150			
Cadmium	ND	0.0020	0.002000	0	95.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	ND	0.0060	0.006000	0	99.3	50	150			
Manganese	0.0026	0.0020	0.002000	0	131	50	150			
Molybdenum	0.0087	0.0080	0.008000	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842243	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010	0.005000	0	93.4	50	150			
Silver	ND	0.0050	0.005000	0	93.8	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842244	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842245	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	103	85	115			
Barium	0.50	0.0020	0.5000	0	99.0	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115			
Chromium	0.49	0.0060	0.5000	0	98.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.6	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842246	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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842246	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	112	50	150			
Barium	ND	0.0020	0.002000	0	98.5	50	150			
Boron	ND	0.040	0.04000	0	99.7	50	150			
Cadmium	ND	0.0020	0.002000	0	77.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	99.8	50	150			
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Molybdenum	0.0093	0.0080	0.008000	0	116	50	150			
Nickel	ND	0.010	0.005000	0	97.4	50	150			
Silver	ND	0.0050	0.005000	0	95.4	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	C28013	RunNo:	28013					
Prep Date:		Analysis Date:	8/6/2015	SeqNo:	843253	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	C28013	RunNo:	28013					
Prep Date:		Analysis Date:	8/6/2015	SeqNo:	843254	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.50	0.0060	0.5000	0	99.7	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	C28013	RunNo:	28013					
Prep Date:		Analysis Date:	8/6/2015	SeqNo:	843255	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0063	0.0060	0.006000	0	105	50	150			
Zinc	ND	0.010	0.005000	0	128	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844435	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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844435	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844436	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.51	0.020	0.5000	0	102	85	115			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844437	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.026	0.020	0.02000	0	131	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844438	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844439	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	99.0	85	115			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844440	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.020	0.020	0.02000	0	101	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	1508065-001GMS		SampType:	MS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	R.O. Reject		Batch ID:	R28115		RunNo:	28115				
Prep Date:			Analysis Date:	8/11/2015		SeqNo:	847552		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	0.013	0.00050	0.01250	0	107	70	130				
Selenium	0.031	0.0010	0.02500	0.006711	99.1	70	130				
Uranium	0.019	0.00050	0.01250	0.004729	117	70	130				

Sample ID	1508065-001GMSD		SampType:	MSD		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	R.O. Reject		Batch ID:	R28115		RunNo:	28115				
Prep Date:			Analysis Date:	8/11/2015		SeqNo:	847553		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	0.013	0.00050	0.01250	0	105	70	130	2.13	20		
Selenium	0.032	0.0010	0.02500	0.006711	100	70	130	0.805	20		
Uranium	0.019	0.00050	0.01250	0.004729	115	70	130	1.42	20		

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R28115		RunNo: 28115					
Prep Date:			Analysis Date: 8/11/2015		SeqNo: 847560		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	99.5	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			
Uranium	0.012	0.00050	0.01250	0	99.9	85	115			

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	R28115		RunNo:	28115				
Prep Date:			Analysis Date:	8/11/2015		SeqNo:	847561		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	0.012	0.00050	0.01250	0	98.8	85	115				
Selenium	0.025	0.0010	0.02500	0	101	85	115				
Uranium	0.012	0.00050	0.01250	0	99.1	85	115				

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R28115	RunNo:	28115					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847562	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	0.0010	0.0010	0.001000	0	103	50	150			
Uranium	0.00051	0.00050	0.0005000	0	103	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R28115	RunNo:	28115					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847563	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.0011	0.0010	0.001000	0	113	50	150			
Uranium	0.00052	0.00050	0.0005000	0	104	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28115	RunNo:	28115					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847564	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28115	RunNo:	28115					
Prep Date:		Analysis Date:	8/11/2015	SeqNo:	847565	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	1508065-001GMS	SampType:	MS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	R.O. Reject	Batch ID:	D28151	RunNo:	28151					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848111	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.12	0.0050	0.1250	0.001284	97.9	70	130			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	D28151	RunNo:	28151					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848117	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	D28151	RunNo:	28151					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848119	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	104	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	D28151	RunNo:	28151					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848122	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. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-20665	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	20665	RunNo:	28038					
Prep Date:	8/7/2015	Analysis Date:	8/7/2015	SeqNo:	844199	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20665	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	20665	RunNo:	28038					
Prep Date:	8/7/2015	Analysis Date:	8/7/2015	SeqNo:	844200	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	99.8	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID MB	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R27968	RunNo: 27968								
Prep Date:	Analysis Date: 8/5/2015	SeqNo: 841566 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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R27968	RunNo: 27968								
Prep Date:	Analysis Date: 8/5/2015	SeqNo: 841567 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Sample ID MB	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R28192	RunNo: 28192								
Prep Date:	Analysis Date: 8/13/2015	SeqNo: 849498 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R28192	RunNo: 28192								
Prep Date:	Analysis Date: 8/13/2015	SeqNo: 849499 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.0	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-20627	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844775	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20627	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844776	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	110	70	130			

Sample ID	1508065-001BMS	SampType:	MS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	R.O. Reject	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844786	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	127	45.7	164			

Sample ID	1508065-001BMSD	SampType:	MSD	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	R.O. Reject	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844787	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.14	0.010	0.1000	0	135	45.7	164	6.11	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 | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS-20617		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID:	20617		RunNo:	27957				
Prep Date:	8/5/2015		Analysis Date:	8/5/2015		SeqNo:	842448		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.9	1.0	5.000	0	118	60.1	156				
Surr: DNOP	0.52		0.5000		104	72	136				

Sample ID	MB-20617		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	20617		RunNo:	27957				
Prep Date:	8/5/2015		Analysis Date:	8/5/2015		SeqNo:	842468		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	0.95		1.000		95.5	72	136				

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample 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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-20661		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	20661		RunNo:	28049			
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845110		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.6	44.5	110			
Surr: Tetrachloro-m-xylene	2.3		2.500		90.4	31.8	95.7			

Sample ID	LCS-20661		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	20661		RunNo:	28049			
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845133		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	5.9	1.0	5.000	0	117	9.01	142			
Aroclor 1260	6.0	1.0	5.000	0	119	25.6	164			
Surr: Decachlorobiphenyl	2.2		2.500		89.2	44.5	110			
Surr: Tetrachloro-m-xylene	2.7		2.500		107	31.8	95.7			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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	RB	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R27991		RunNo: 27991						
Prep Date:		Analysis Date: 8/5/2015		SeqNo: 842681		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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID RB	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R27991		RunNo: 27991							
Prep Date:	Analysis Date: 8/5/2015		SeqNo: 842681		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		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R27991		RunNo: 27991							
Prep Date:	Analysis Date: 8/5/2015		SeqNo: 842682		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	98.4	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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R27991			RunNo: 27991					
Prep Date:	Analysis Date: 8/5/2015			SeqNo: 842682		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)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.9	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.8		10.00		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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-20677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	20677		RunNo:	28051			
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	844835		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	14		20.00		68.8	37.2	136			

Sample ID	LCS-20677		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	20677		RunNo:	28051			
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	845107		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.4	57.8	83.9			S
1-Methylnaphthalene	74	2.0	80.20	0	91.8	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	89.4	34.2	94.5			
Benzo(a)pyrene	0.44	0.070	0.5020	0	87.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.8	37.2	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-20629	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842690	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-20629	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842691	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	104	64.4	135			

Sample ID	LCSD-20629	SampType:	LCSD	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSS02	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842692	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	64.4	135	12.7	21.4	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R28452		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R28452		RunNo:	28452				
Prep Date:			Analysis Date:	8/12/2015		SeqNo:	859841		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R28452		SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	LCSW		Batch ID:	R28452		RunNo:	28452				
Prep Date:			Analysis Date:	8/12/2015		SeqNo:	859842		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.521		0.5000	0	104	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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R27991	RunNo:	27991					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842759	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	11		10.00		110	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R27991	RunNo:	27991					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842760	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	80.6	122			
Surr: BFB	10		10.00		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#: 1508065

26-Aug-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R28452	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/18/2015	SeqNo:	859845	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	ND	0.551								
Radium-226 ±	0.342	0.551								
Radium-228	0.014	0.860								
Radium-228 ±	0.371	0.860								

Sample ID	MB-R28452	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/18/2015	SeqNo:	859847	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.556	0.599								
Radium-226 ±	0.441	0.599								
Radium-228	0.314	0.882								
Radium-228 ±	0.412	0.882								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508065

26-Aug-15

Client: Navajo Refining Company

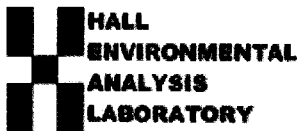
Project: Monthly R.O. Reject

Sample ID	MB-20626	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	20626	RunNo:	28016					
Prep Date:	8/5/2015	Analysis Date:	8/6/2015	SeqNo:	843340	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20626	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	20626	RunNo:	28016					
Prep Date:	8/5/2015	Analysis Date:	8/6/2015	SeqNo:	843341	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |



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 **NAVAJO REFINING CO**

Work Order Number: **1508065**

RcptNo: **1**

Received by/date:

CS

08/04/15

Logged By: **Ashley Gallegos**

8/4/2015 9:13:00 AM

[Signature]

Completed By: **Ashley Gallegos**

8/4/2015 10:09:41 AM

[Signature]

Reviewed By

[Signature]

ashley gallegos

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: **6**
(**<2** or **<12** unless noted)
- Adjusted? ☐
- Checked by: *JA*

Special Handling (if applicable)

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

Person Notified

Date

By Whom

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding

Client Instructions

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			



October 2, 2015

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt
7015 0640 0006 6577 5018

**Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
August 2015 ACO – Civil Penalty Payment
Navajo Refining Company, L.L.C.
Artesia Refinery**

Dear Director:

Enclosed please find a check in the amount of \$3,100 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for August 2015 submitted electronically on September 15, 2015. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
HFC Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
151002 RO Reject ACO – Civil Penalty Payment

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date	09/29/2015
Check Amount	\$ 3,100.00
Vendor No	5126527
Payment Document	2000124161
Company Code	1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
09/28/2015	092815	STIPULATED PENALTY FOR RO	3,100.00	0.00	3,100.00

Payment document	Check number	Date	Currency	Payment amount
2000124161	1000309264	09/29/2015	USD	*****3,100.00*

↓ PLEASE FOLD ON PERFORATION AND DETACH HERE ↓

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT.

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611 1000309264
09/29/2015

PAY EXACTLY

*****3,100.00*USD

VOID AFTER 180 DAYS

PAY *** THREE THOUSAND ONE HUNDRED and 00 /100 USD***

TO THE
ORDER OF STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225
Bank of America N.A.

Stephen D. Wise
AUTHORIZED SIGNATURE



Czel's copy

OCD
2015 SEP 11 P 3:31

September 10, 2015

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt
7014 3490 0000 6269 9046

**Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
July 2015 ACO – Civil Penalty Payment
Navajo Refining Company, L.L.C.
Artesia Refinery**

Dear Director:

Enclosed please find a check in the amount of \$2,700 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). This penalty was calculated and reported to OCD in the monthly report for July 2015 submitted electronically on August 14, 2015. If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
HFC Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
150910 RO Reject ACO – Civil Penalty Payment

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 08/19/2015
Check Amount \$ 2,700.00
Vendor No 5126527
Payment Document 2000099552
Company Code 1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
08/18/2015	081815	STIPULATED PENALTY FOR RO REJECT FL	2,700.00	0.00	2,700.00

Payment document	Check number	Date	Currency	Payment amount
2000099552	1000305998	08/19/2015	USD	*****2,700.00*

↓ PLEASE FOLD ON PERFORATION AND DETACH HERE ↓

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT.

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611 1000305998
08/19/2015

PAY EXACTLY

*****2,700.00*USD

VOID AFTER 180 DAYS

PAY *** TWO THOUSAND SEVEN HUNDRED and 00 /100 USD***

TO THE
ORDER OF STATE OF N M GENERAL FUND
DIRECTOR OIL CONSERVATION DIV
NM EMNR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225
Bank of America N.A.

Stephen D Wise
AUTHORIZED SIGNATURE

1000305998

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, August 14, 2015 10:23 AM
To: Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Coons, Christina (Christie); Denton, Scott
Subject: ACO Monthly Report for July 2015
Attachments: 150814 ACO Monthly Report for July 2015 with data.pdf

Jim & Carl,

Attached it the monthly report for July concerning the RO Reject.

Let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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August 14, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – July 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's August 2015 monthly report, for the period of July 1-31, under the Order.

Specifically, this report covers the July 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire July reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from July 1 through July 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from July 1 through July 31.

Navajo has calculated a penalty of \$2,700 for July 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 27 days in July. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on July 1, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo has conducted a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels. Navajo

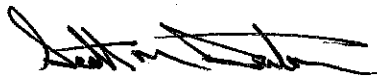
anticipates completion and submittal of the associated background groundwater concentration report to OCD in late August or early September 2015.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015.

As the permit modification application was deemed to be administratively complete, Navajo completed the public notice requirements set forth in 20.6.2.3108B New Mexico Administrative Code (NMAC) regarding public notice of the permit modification request. Mailings were sent to adjacent landowners within a 1/3 mile radius of the property, signs have been posted at the discharge location (Richey Avenue) and at the Refinery offices, and the notice has been published in the *Artesia Daily Press*. Navajo is currently preparing the proof of completion of the public notice requirements for submittal to the OCD.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
7/1/2015	126	107	233	7989	62	2140	10129
7/2/2015	128	106	234	8023	62	2131	10154
7/3/2015	137	110	247	8469	63	2160	10629
7/4/2015	140	111	251	8606	66	2270	10876
7/5/2015	132	109	241	8263	67	2293	10556
7/6/2015	125	113	238	8160	68	2331	10491
7/7/2015	129	107	236	8091	71	2426	10517
7/8/2015	131	118	249	8537	74	2545	11082
7/9/2015	131	104	235	8057	64	2204	10261
7/10/2015	138	107	245	8400	65	2236	10636
7/11/2015	134	109	243	8331	68	2317	10648
7/12/2015	125	102	227	7783	70	2401	10184
7/13/2015	137	103	240	8229	72	2452	10681
7/14/2015	133	108	241	8263	73	2514	10777
7/15/2015	132	77	209	7166	74	2537	9703
7/16/2015	132	91	223	7646	75	2571	10217
7/17/2015	132	108	240	8229	76	2591	10820
7/18/2015	133	108	241	8263	78	2673	10936
7/19/2015	129	115	244	8366	77	2636	11002
7/20/2015	133	109	242	8297	78	2689	10986
7/21/2015	127	108	235	8057	78	2684	10741
7/22/2015	134	78	212	7269	77	2655	9924
7/23/2015	131	85	216	7406	75	2569	9975
7/24/2015	140	111	251	8606	63	2150	10756
7/25/2015	127	111	238	8160	64	2201	10361
7/26/2015	127	111	238	8160	65	2228	10388
7/27/2015	133	113	246	8434	65	2218	10652
7/28/2015	135	112	247	8469	65	2223	10692
7/29/2015	142	0	142	4869	67	2310	7179
7/30/2015	129	131	260	8914	69	2350	11264
7/31/2015	129	130	259	8880	69	2366	11246

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - July 2015

Order Section III, Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	27	\$2,700
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$2,700

Attachment 3
Analytical Lab Report



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

July 22, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1507157

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/3/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507157**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/1/2015 2:50:00 PM

Lab ID: 1507157-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	7/14/2015 1:48:38 PM	R27505
Lead	ND	0.00050		mg/L	1	7/13/2015 4:43:45 PM	R27474
Selenium	0.011	0.0010		mg/L	1	7/14/2015 1:11:54 PM	R27505
Uranium	0.0066	0.00050		mg/L	1	7/13/2015 4:43:45 PM	R27474
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.79	0.574		pCi/L	1	7/16/2015	R27657
Radium-226 ±	0.792	0.574		pCi/L	1	7/16/2015	R27657
Radium-228	0.141	0.802		pCi/L	1	7/16/2015	R27657
Radium-228 ±	0.359	0.802		pCi/L	1	7/16/2015	R27657
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.7	2.0		mg/L	20	7/6/2015 10:17:45 PM	R27319
Chloride	210	10		mg/L	20	7/6/2015 10:17:45 PM	R27319
Sulfate	1800	50		mg/L	100	7/15/2015 4:09:28 PM	R27535
Nitrate+Nitrite as N	2.1	1.0		mg/L	5	7/6/2015 11:32:12 PM	R27319
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3890	20.0	*	mg/L	1	7/9/2015 2:45:00 PM	20140
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	7/13/2015	R27657
SM4500-H+B: PH							Analyst: JRR
pH	8.04	1.68	H	pH units	1	7/9/2015 10:05:05 PM	R27410
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Barium	0.074	0.0020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Boron	0.088	0.040		mg/L	1	7/7/2015 3:24:49 PM	R27323
Cadmium	ND	0.0020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Chromium	ND	0.0060		mg/L	1	7/7/2015 3:24:49 PM	R27323
Cobalt	ND	0.0060		mg/L	1	7/7/2015 3:24:49 PM	R27323
Copper	ND	0.0060		mg/L	1	7/7/2015 3:24:49 PM	R27323
Iron	ND	0.020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Manganese	ND	0.0020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Molybdenum	ND	0.0080		mg/L	1	7/7/2015 3:24:49 PM	R27323
Nickel	ND	0.010		mg/L	1	7/7/2015 3:24:49 PM	R27323
Silver	ND	0.0050		mg/L	1	7/7/2015 3:24:49 PM	R27323
Zinc	0.028	0.010		mg/L	1	7/7/2015 3:24:49 PM	R27323
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	7/8/2015 4:35:51 PM	20160

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507157**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/1/2015 2:50:00 PM

Lab ID: 1507157-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:02:41 PM	20171
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1221	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1232	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1242	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1248	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1254	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1260	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Surr: Decachlorobiphenyl	63.2	44.5-110		%REC	1	7/14/2015 8:23:58 AM	20149
Surr: Tetrachloro-m-xylene	65.6	31.8-95.7		%REC	1	7/14/2015 8:23:58 AM	20149
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/6/2015 8:38:10 PM	20109
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/6/2015 8:38:10 PM	20109
Surr: DNOP	99.5	76.5-150		%REC	1	7/6/2015 8:38:10 PM	20109
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/7/2015 4:57:38 PM	R27335
Surr: BFB	86.0	57.8-137		%REC	1	7/7/2015 4:57:38 PM	R27335
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	7/8/2015 3:12:02 PM	20150
1-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:12:02 PM	20150
2-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:12:02 PM	20150
Benzo(a)pyrene	ND	0.070		µg/L	1	7/8/2015 3:12:02 PM	20150
Surr: Benzo(e)pyrene	58.5	37.2-136		%REC	1	7/8/2015 3:12:02 PM	20150
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507157**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/1/2015 2:50:00 PM

Lab ID: 1507157-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 4:49:29 AM	R27395
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
Surr: Dibromofluoromethane	93.5	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
Surr: Toluene-d8	102	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	7/7/2015	20119

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 27
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507157

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507157-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:16:26 PM	20171
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Naphthalene	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Acetone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromodichloromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromoform	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromomethane	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Butanone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Carbon disulfide	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chloroethane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chloromethane	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
4-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
cis-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Dibromochloromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Dibromomethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507157**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507157-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,3-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2,2-Dichloropropane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Hexachlorobutadiene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Hexanone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Isopropylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
4-Isopropyltoluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
4-Methyl-2-pentanone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
n-Butylbenzene	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
n-Propylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
sec-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Styrene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
tert-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
trans-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Trichlorofluoromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 5:18:14 AM	R27395
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395
Surr: Dibromofluoromethane	95.8	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395
Surr: Toluene-d8	102	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 27
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818884		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818885		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Barium	0.47	0.0020	0.5000	0	94.9	85	115			
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Copper	0.47	0.0060	0.5000	0	95.0	85	115			
Iron	0.47	0.020	0.5000	0	93.1	85	115			
Manganese	0.48	0.0020	0.5000	0	96.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.7	85	115			
Silver	0.099	0.0050	0.1000	0	99.3	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818886		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	147	50	150			
Barium	0.0022	0.0020	0.002000	0	112	50	150			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818886	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	89.4	50	150			
Cadmium	0.0020	0.0020	0.002000	0	101	50	150			
Chromium	ND	0.0060	0.006000	0	89.8	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	ND	0.0060	0.006000	0	99.2	50	150			
Iron	0.022	0.020	0.02000	0	112	50	150			
Manganese	ND	0.0020	0.002000	0	98.0	50	150			
Molybdenum	0.0092	0.0080	0.008000	0	115	50	150			
Nickel	ND	0.010	0.005000	0	92.4	50	150			
Silver	0.0055	0.0050	0.005000	0	109	50	150			
Zinc	ND	0.010	0.005000	0	90.4	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818887	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818888	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Boron	0.51	0.040	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27323		RunNo: 27323					
Prep Date:			Analysis Date: 7/7/2015		SeqNo: 818888		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Copper	0.48	0.0060	0.5000	0	96.1	85	115			
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Manganese	0.49	0.0020	0.5000	0	97.6	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.1	85	115			
Silver	0.10	0.0050	0.1000	0	99.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.0	85	115			

Sample ID	LLLCS		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: R27323			RunNo: 27323				
Prep Date:	Analysis Date: 7/7/2015			SeqNo: 818889		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	133	50	150			
Barium	0.0024	0.0020	0.002000	0	118	50	150			
Boron	ND	0.040	0.04000	0	89.1	50	150			
Cadmium	ND	0.0020	0.002000	0	89.0	50	150			
Chromium	ND	0.0060	0.006000	0	75.2	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Copper	0.0066	0.0060	0.006000	0	110	50	150			
Iron	0.021	0.020	0.02000	0	106	50	150			
Manganese	0.0020	0.0020	0.002000	0	103	50	150			
Molybdenum	0.011	0.0080	0.008000	0	140	50	150			
Nickel	ND	0.010	0.005000	0	104	50	150			
Silver	ND	0.0050	0.005000	0	72.0	50	150			
Zinc	ND	0.010	0.005000	0	88.8	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27474		RunNo: 27474					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 824374		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	96.3	85	115			
Uranium	0.012	0.00050	0.01250	0	95.6	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27474		RunNo: 27474					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 824375		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	96.4	85	115			
Uranium	0.012	0.00050	0.01250	0	96.3	85	115			

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R27474		RunNo: 27474					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 824376		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	94.0	50	150			
Uranium	ND	0.00050	0.0005000	0	92.9	50	150			

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R27474		RunNo: 27474					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 824377		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Uranium	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R27474		RunNo:	27474				
Prep Date:		Analysis Date:	7/13/2015		SeqNo:	824379	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R27474		RunNo:	27474				
Prep Date:		Analysis Date:	7/13/2015		SeqNo:	824380	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 |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R27474			RunNo: 27474					
Prep Date:		Analysis Date: 7/13/2015			SeqNo: 824380		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825388		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	101	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825389		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	100	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID	LLCS			SampType:	LCSLL			TestCode:	EPA 200.8: Dissolved Metals		
Client ID:	BatchQC			Batch ID:	R27505			RunNo:	27505		
Prep Date:				Analysis Date:	7/14/2015			SeqNo:	825390	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	0.0010	0.001000	0	94.0	50	150				
Selenium	ND	0.0010	0.001000	0	98.3	50	150				

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825391		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825392		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825392	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	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825393	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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20160	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	20160	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820623	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20160	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	20160	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820626	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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R27319			RunNo: 27319					
Prep Date:		Analysis Date: 7/6/2015			SeqNo: 818775		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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R27319			RunNo: 27319					
Prep Date:		Analysis Date: 7/6/2015			SeqNo: 818776		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	4.7	0.50	5.000	0	93.6	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.2	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R27535			RunNo: 27535					
Prep Date:		Analysis Date: 7/15/2015			SeqNo: 826667		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R27535		RunNo: 27535					
Prep Date:			Analysis Date: 7/15/2015		SeqNo: 826668		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20171		SampType: MBLK		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	PBW		Batch ID: 20171		RunNo: 27393					
Prep Date:	7/9/2015		Analysis Date: 7/9/2015		SeqNo: 821853		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20171		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 20171		RunNo: 27393					
Prep Date:	7/9/2015		Analysis Date: 7/9/2015		SeqNo: 821854		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20109		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 20109		RunNo: 27291					
Prep Date:	7/6/2015		Analysis Date: 7/6/2015		SeqNo: 818285		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	0.88		1.000		88.5	76.5	150			

Sample ID	LCS-20109		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 20109		RunNo: 27291					
Prep Date:	7/6/2015		Analysis Date: 7/6/2015		SeqNo: 818286		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	1.0	5.000	0	81.8	60.1	156			
Surr: DNOP	0.49		0.5000		97.8	76.5	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R27335		RunNo: 27335					
Prep Date:			Analysis Date: 7/7/2015		SeqNo: 819311		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		89.3	57.8	137			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R27335		RunNo: 27335					
Prep Date:			Analysis Date: 7/7/2015		SeqNo: 819312		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.0	80	120			
Surr: BFB	19		20.00		94.6	57.8	137			

Sample ID	1507157-001JMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject		Batch ID: R27335		RunNo: 27335					
Prep Date:			Analysis Date: 7/7/2015		SeqNo: 819318		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0.04740	92.4	51	131			
Surr: BFB	19		20.00		92.6	57.8	137			

Sample ID	1507157-001JMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject		Batch ID: R27335		RunNo: 27335					
Prep Date:			Analysis Date: 7/7/2015		SeqNo: 819319		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0.04740	85.8	51	131	6.70	20	
Surr: BFB	18		20.00		91.6	57.8	137	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20149	SampType: MBLK			TestCode: EPA Method 8082: PCB's					
Client ID:	PBW	Batch ID: 20149			RunNo: 27467					
Prep Date:	7/8/2015	Analysis Date: 7/14/2015			SeqNo: 824114		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.5		2.500		60.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.8	31.8	95.7			

Sample ID	LCS-20149		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 20149		RunNo: 27467					
Prep Date:	7/8/2015		Analysis Date: 7/14/2015		SeqNo: 824697		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.6	1.0	5.000	0	72.5	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	84.4	25.6	164			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		76.8	31.8	95.7			

Sample ID	1507157-001DMS		SampType: MS		TestCode: EPA Method 8082: PCB's					
Client ID:	R.O. Reject		Batch ID: 20149		RunNo: 27467					
Prep Date:	7/8/2015		Analysis Date: 7/14/2015		SeqNo: 824698		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	62.2	14.5	105			
Aroclor 1260	3.7	1.0	5.000	0	74.5	21.4	125			
Surr: Decachlorobiphenyl	1.5		2.500		58.4	44.5	110			
Surr: Tetrachloro-m-xylene	1.4		2.500		56.8	31.8	95.7			

Sample ID	1507157-001DMSD		SampType: MSD		TestCode: EPA Method 8082: PCB's					
Client ID:	R.O. Reject		Batch ID: 20149		RunNo: 27467					
Prep Date:	7/8/2015		Analysis Date: 7/14/2015		SeqNo: 824699		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	64.0	14.5	105	2.85	20	
Aroclor 1260	3.8	1.0	5.000	0	76.2	21.4	125	2.23	27.6	
Surr: Decachlorobiphenyl	1.5		2.500		60.8	44.5	110	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		58.4	31.8	95.7	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821898	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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821898	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	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.5	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821903	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R27395			RunNo: 27395					
Prep Date:	Analysis Date: 7/9/2015			SeqNo: 821903		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID	rb7	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821963		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								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821963	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	9.9		10.00		98.9	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821963		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R27395		RunNo: 27395					
Prep Date:			Analysis Date: 7/9/2015		SeqNo: 821965		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	117	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.0	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20150	SampType:	MBLK		TestCode:	EPA Method 8310: PAHs				
Client ID:	PBW	Batch ID:	20150		RunNo:	27333				
Prep Date:	7/8/2015	Analysis Date:	7/8/2015		SeqNo:	820082	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	17		20.00		82.6	37.2	136			

Sample ID	LCS-20150		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 20150		RunNo: 27333					
Prep Date:	7/8/2015		Analysis Date: 7/8/2015		SeqNo: 820084		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.3	57.8	83.9			S
1-Methylnaphthalene	75	2.0	80.20	0	93.1	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	90.5	34.2	94.5			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.7	37.2	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20119		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	20119		RunNo:	27307				
Prep Date:	7/7/2015		Analysis Date:	7/7/2015		SeqNo:	818519		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-20119		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	20119		RunNo:	27307				
Prep Date:	7/7/2015		Analysis Date:	7/7/2015		SeqNo:	818520		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	18	2.5	20.00	0	92.4	64.4	135				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27657		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R27657		RunNo:	27657				
Prep Date:			Analysis Date:	7/13/2015		SeqNo:	830507		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R27657		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R27657		RunNo: 27657					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 830508		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.512		0.5000	0	102	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27657		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R27657		RunNo:	27657			
Prep Date:			Analysis Date:	7/16/2015		SeqNo:	830510	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.294	0.541								
Radium-226 ±	0.354	0.541								
Radium-228	0.097	0.682								
Radium-228 ±	0.303	0.682								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20140		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 20140		RunNo: 27385					
Prep Date:	7/7/2015		Analysis Date: 7/9/2015		SeqNo: 821530		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20140		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 20140		RunNo: 27385					
Prep Date:	7/7/2015		Analysis Date: 7/9/2015		SeqNo: 821531		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1507157

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

7/3/2015 9:45:00 AM

Completed By: Lindsay Mangin

7/6/2015 8:30:01 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?

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:

6 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	2.1	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☒ X Standard ☐ Level 4 (Full Validation)

☐ Other

☐ EDD (Type) _____

Turn-Around Time:

☒ X Standard ☐ Rush

Project Name:

Monthly R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salisbury

On Ice: ☒ X Yes ☐ No

Sample Temperature: 25.00 2.1

Date Time Matrix Sample Request ID

7-1-15 2:50pm liquid R.O. Reject

7-1-15 2:50pm 1/2

7-1-15 2:50pm 1/2

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

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7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

Relinquished by: Elizabeth Salisbury

Relinquished by: Elizabeth Salisbury

Relinquished by: Elizabeth Salisbury

Relinquished by: Elizabeth Salisbury

Relinquished by: Elizabeth Salisbury

Relinquished by: Elizabeth Salisbury

Date: 7-2-15 11am

Date: 7-2-15 11am

Date: 7-2-15 11am

Date: 7-2-15 11am

Date: 7-2-15 11am

Date: 7-2-15 11am

Date: 7-2-15 11am



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

8260B: WQCC List VOCs	X	8270C: WQCC list SVOCs	X	6010B: WQCC Metals	X	335.4: Total Cyanide	X	7470: Mercury	X	8015: GRO, DRO, ORO	X	8082: PCBs	X	Radioactivity (Ra-226+Ra-228)	X	Sulfate	X	Chloride	X	Fluoride	X	Nitrate/Nitrite	X	Total Dissolved Solids	X
-----------------------	---	------------------------	---	--------------------	---	----------------------	---	---------------	---	---------------------	---	------------	---	-------------------------------	---	---------	---	----------	---	----------	---	-----------------	---	------------------------	---

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2-Trichloroethane; 1,2-Dichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromomethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

Date Time

07/03/15 0945

Date Time

07/03/15 0945

Date Time

07/03/15 0945

Date Time

07/03/15 0945

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.



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575 748 3311
(Fax) 575 746 5451

Biannual RO Reject Sample Details Attachment



HOLLYFRONTIER

The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	7/1/2015 @ 2:43 pm
End Date and Time	7/1/2015 @ 2:54 pm

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Pairs / Sample Intervals	One
--------------------------	-----

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Neat (None)	HCl	HNO3	H2SO4	Preservatives				Other	Analysis and/or Method Requested
								NaOH	Na2S2O3	NaHSO4			
1	500ml	Plastic	2	X			X						pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3		X								8015 GRO
3	500ml	Plastic	1			X							6020 total metals, 7470 Hg
4	125ml	Plastic	1			X							6020 Dissolved Metals
5	500ml	Plastic	2					X					Cyanide
6	1L	Plastic	3			X							Radium 226/228
7	40ml	VOA	2		X								8260 see attached list
8	1L	Glass	1	X									8270 see attached list
9	1L	Glass	2	X									8062 PCBs
10	40ml	VOA	2	X									8015 DRO
11	40ml	VOA	2	X	X								Radium 226/228

Field Data (Weather, Observations, Etc):	7/1/2014 2:43 pm Temp. 91.4 °F, Humidity 29%, Wind Dir. East, Wind Speed 10.4 mph, Conditions Clear
Date and Time:	

Field Temp. 25.9 C Field pH 7.83

Storage Method	Ice <input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>
Shipping Media	Ice <input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

July 22, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1507158

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/3/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507158**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 7/1/2015 3:02:00 PM

Lab ID: 1507158-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	7/14/2015 1:51:42 PM	R27505
Lead	ND	0.00050		mg/L	1	7/14/2015 1:14:57 PM	R27505
Selenium	0.0082	0.0010		mg/L	1	7/14/2015 1:14:57 PM	R27505
Uranium	0.0055	0.00050		mg/L	1	7/14/2015 1:14:57 PM	R27505
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.05	0.202		pCi/L	1	7/16/2015	R27658
Radium-226 ±	0.561	0.202		pCi/L	1	7/16/2015	R27658
Radium-228	0.158	0.824		pCi/L	1	7/16/2015	R27658
Radium-228 ±	0.38	0.824		pCi/L	1	7/16/2015	R27658
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.4	2.0		mg/L	20	7/6/2015 10:42:35 PM	R27319
Chloride	130	10		mg/L	20	7/6/2015 10:42:35 PM	R27319
Sulfate	1500	50		mg/L	100	7/15/2015 4:21:52 PM	R27535
Nitrate+Nitrite as N	1.8	1.0		mg/L	5	7/6/2015 11:44:37 PM	R27319
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3100	20.0	*	mg/L	1	7/9/2015 2:45:00 PM	20140
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	7/13/2015	R27658
SM4500-H+B: PH							Analyst: JRR
pH	8.06	1.68	H	pH units	1	7/9/2015 10:09:14 PM	R27410
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Barium	0.063	0.0020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Boron	0.076	0.040		mg/L	1	7/7/2015 3:26:45 PM	R27323
Cadmium	ND	0.0020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Chromium	ND	0.0060		mg/L	1	7/7/2015 3:26:45 PM	R27323
Cobalt	ND	0.0060		mg/L	1	7/7/2015 3:26:45 PM	R27323
Copper	ND	0.0060		mg/L	1	7/7/2015 3:26:45 PM	R27323
Iron	ND	0.020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Manganese	0.010	0.0020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Molybdenum	ND	0.0080		mg/L	1	7/7/2015 3:26:45 PM	R27323
Nickel	ND	0.010		mg/L	1	7/7/2015 3:26:45 PM	R27323
Silver	ND	0.0050		mg/L	1	7/7/2015 3:26:45 PM	R27323
Zinc	0.065	0.010		mg/L	1	7/7/2015 3:26:45 PM	R27323
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	7/8/2015 4:37:50 PM	20160

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507158**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 7/1/2015 3:02:00 PM

Lab ID: 1507158-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:30:06 PM	20171
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1221	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1232	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1242	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1248	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1254	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1260	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Surr: Decachlorobiphenyl	70.8	44.5-110		%REC	1	7/14/2015 10:41:50 AM	20149
Surr: Tetrachloro-m-xylene	58.8	31.8-95.7		%REC	1	7/14/2015 10:41:50 AM	20149
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/6/2015 8:59:32 PM	20109
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/6/2015 8:59:32 PM	20109
Surr: DNOP	100	76.5-150		%REC	1	7/6/2015 8:59:32 PM	20109
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/7/2015 5:26:23 PM	R27335
Surr: BFB	86.8	57.8-137		%REC	1	7/7/2015 5:26:23 PM	R27335
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	7/8/2015 3:41:21 PM	20150
1-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:41:21 PM	20150
2-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:41:21 PM	20150
Benzo(a)pyrene	ND	0.070		µg/L	1	7/8/2015 3:41:21 PM	20150
Surr: Benzo(e)pyrene	81.0	37.2-136		%REC	1	7/8/2015 3:41:21 PM	20150
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507158**

Date Reported: **7/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 7/1/2015 3:02:00 PM

Lab ID: 1507158-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 5:46:58 AM	R27395
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
Surr: Dibromofluoromethane	88.7	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
Surr: Toluene-d8	105	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	7/7/2015	20119

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 26
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507158

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507158-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:43:48 PM	20171
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/8/2015 2:03:47 AM	R27335
Surr: BFB	86.3	57.8-137		%REC	1	7/8/2015 2:03:47 AM	R27335
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Naphthalene	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Acetone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromodichloromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromoform	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromomethane	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Butanone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Carbon disulfide	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chloroethane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chloromethane	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
4-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
cis-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Dibromochloromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Dibromomethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507158**Date Reported: **7/22/2015****CLIENT:** Navajo Refining Company**Client Sample ID:** Trip Blank**Project:** Monthly RO Reject**Collection Date:****Lab ID:** 1507158-002**Matrix:** TRIP BLANK**Received Date:** 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,3-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2,2-Dichloropropane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Hexachlorobutadiene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Hexanone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Isopropylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
4-Isopropyltoluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
4-Methyl-2-pentanone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
n-Butylbenzene	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
n-Propylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
sec-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Styrene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
tert-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
trans-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Trichlorofluoromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 6:15:42 AM	R27395
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395
Surr: Dibromofluoromethane	97.8	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395
Surr: Toluene-d8	104	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395

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

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818884		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818885		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Barium	0.47	0.0020	0.5000	0	94.9	85	115			
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Copper	0.47	0.0060	0.5000	0	95.0	85	115			
Iron	0.47	0.020	0.5000	0	93.1	85	115			
Manganese	0.48	0.0020	0.5000	0	96.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.7	85	115			
Silver	0.099	0.0050	0.1000	0	99.3	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818886		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	147	50	150			
Barium	0.0022	0.0020	0.002000	0	112	50	150			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818886	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	89.4	50	150			
Cadmium	0.0020	0.0020	0.002000	0	101	50	150			
Chromium	ND	0.0060	0.006000	0	89.8	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	ND	0.0060	0.006000	0	99.2	50	150			
Iron	0.022	0.020	0.02000	0	112	50	150			
Manganese	ND	0.0020	0.002000	0	98.0	50	150			
Molybdenum	0.0092	0.0080	0.008000	0	115	50	150			
Nickel	ND	0.010	0.005000	0	92.4	50	150			
Silver	0.0055	0.0050	0.005000	0	109	50	150			
Zinc	ND	0.010	0.005000	0	90.4	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818887	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818888	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Boron	0.51	0.040	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R27323			RunNo: 27323				
Prep Date:	Analysis Date: 7/7/2015			SeqNo: 818888		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Copper	0.48	0.0060	0.5000	0	96.1	85	115			
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Manganese	0.49	0.0020	0.5000	0	97.6	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.1	85	115			
Silver	0.10	0.0050	0.1000	0	99.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.0	85	115			

Sample ID	LLLCS		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: R27323			RunNo: 27323				
Prep Date:	Analysis Date: 7/7/2015			SeqNo: 818889		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	133	50	150			
Barium	0.0024	0.0020	0.002000	0	118	50	150			
Boron	ND	0.040	0.04000	0	89.1	50	150			
Cadmium	ND	0.0020	0.002000	0	89.0	50	150			
Chromium	ND	0.0060	0.006000	0	75.2	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Copper	0.0066	0.0060	0.006000	0	110	50	150			
Iron	0.021	0.020	0.02000	0	106	50	150			
Manganese	0.0020	0.0020	0.002000	0	103	50	150			
Molybdenum	0.011	0.0080	0.008000	0	140	50	150			
Nickel	ND	0.010	0.005000	0	104	50	150			
Silver	ND	0.0050	0.005000	0	72.0	50	150			
Zinc	ND	0.010	0.005000	0	88.8	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825388		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	101	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			
Uranium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825389		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	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825390		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	94.0	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	ND	0.0010	0.001000	0	98.3	50	150			
Uranium	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825391		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			
Uranium	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW		Batch ID: R27505		RunNo: 27505					
Prep Date:			Analysis Date: 7/14/2015		SeqNo: 825392		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825392	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								
Uranium	ND	0.00050								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825393	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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20160		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	20160		RunNo:	27365				
Prep Date:	7/8/2015		Analysis Date:	7/8/2015		SeqNo:	820623		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-20160		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 20160		RunNo: 27365					
Prep Date:	7/8/2015		Analysis Date: 7/8/2015		SeqNo: 820626		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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 300.0: Anions				
Client ID:	PBW		Batch ID: R27319			RunNo: 27319				
Prep Date:			Analysis Date: 7/6/2015			SeqNo: 818775		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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID: R27319			RunNo: 27319				
Prep Date:			Analysis Date: 7/6/2015			SeqNo: 818776		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	4.7	0.50	5.000	0	93.6	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.2	90	110			

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 300.0: Anions				
Client ID:	PBW		Batch ID: R27535			RunNo: 27535				
Prep Date:			Analysis Date: 7/15/2015			SeqNo: 826667		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID: R27535			RunNo: 27535				
Prep Date:			Analysis Date: 7/15/2015			SeqNo: 826668		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20171	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	20171	RunNo:	27393					
Prep Date:	7/9/2015	Analysis Date:	7/9/2015	SeqNo:	821853	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20171	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	20171	RunNo:	27393					
Prep Date:	7/9/2015	Analysis Date:	7/9/2015	SeqNo:	821854	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20109		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 20109		RunNo: 27291					
Prep Date:	7/6/2015		Analysis Date: 7/6/2015		SeqNo: 818285		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	0.88		1.000		88.5	76.5	150			

Sample ID	LCS-20109		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 20109		RunNo: 27291					
Prep Date:	7/6/2015		Analysis Date: 7/6/2015		SeqNo: 818286		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	1.0	5.000	0	81.8	60.1	156			
Surr: DNOP	0.49		0.5000		97.8	76.5	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819311	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		89.3	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819312	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.0	80	120			
Surr: BFB	19		20.00		94.6	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20149	SampType: MBLK			TestCode: EPA Method 8082: PCB's					
Client ID:	PBW	Batch ID: 20149			RunNo: 27467					
Prep Date:	7/8/2015	Analysis Date: 7/14/2015			SeqNo: 824114		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.5		2.500		60.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.8	31.8	95.7			

Sample ID	LCS-20149		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 20149		RunNo: 27467					
Prep Date:	7/8/2015		Analysis Date: 7/14/2015		SeqNo: 824697		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.6	1.0	5.000	0	72.5	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	84.4	25.6	164			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		76.8	31.8	95.7			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821898	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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID rb1	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R27395			RunNo: 27395						
Prep Date:	Analysis Date: 7/9/2015			SeqNo: 821898		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	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.5	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R27395			RunNo: 27395						
Prep Date:	Analysis Date: 7/9/2015			SeqNo: 821903		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R27395			RunNo: 27395					
Prep Date:	Analysis Date: 7/9/2015			SeqNo: 821903		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID	rb7	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821963		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								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821963	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	9.9		10.00		98.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7		SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW		Batch ID: R27395		RunNo: 27395					
Prep Date:			Analysis Date: 7/9/2015		SeqNo: 821963		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R27395		RunNo: 27395					
Prep Date:			Analysis Date: 7/9/2015		SeqNo: 821965		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	117	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.0	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20150	SampType:	MBLK		TestCode:	EPA Method 8310: PAHs				
Client ID:	PBW	Batch ID:	20150		RunNo:	27333				
Prep Date:	7/8/2015	Analysis Date:	7/8/2015		SeqNo:	820082	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	17		20.00		82.6	37.2	136			

Sample ID	LCS-20150		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 20150		RunNo: 27333					
Prep Date:	7/8/2015		Analysis Date: 7/8/2015		SeqNo: 820084		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.3	57.8	83.9			S
1-Methylnaphthalene	75	2.0	80.20	0	93.1	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	90.5	34.2	94.5			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.7	37.2	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20119		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	20119		RunNo:	27307				
Prep Date:	7/7/2015		Analysis Date:	7/7/2015		SeqNo:	818519		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-20119		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	20119		RunNo:	27307				
Prep Date:	7/7/2015		Analysis Date:	7/7/2015		SeqNo:	818520		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	18	2.5	20.00	0	92.4	64.4	135				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27658		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R27658		RunNo:	27658				
Prep Date:			Analysis Date:	7/13/2015		SeqNo:	830512		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R27658			SampType:	LCS			TestCode:	EPA 335.4: Total Cyanide Subbed		
Client ID:	LCSW			Batch ID:	R27658			RunNo:	27658		
Prep Date:				Analysis Date:	7/13/2015			SeqNo:	830513	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.512		0.5000	0	102	90	110				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27658		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R27658		RunNo:	27658			
Prep Date:			Analysis Date:	7/16/2015		SeqNo:	830515		Units:	pCi/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.294	0.541								
Radium-226 ±	0.354	0.541								
Radium-228	0.523	0.758								
Radium-228 ±	0.388	0.758								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20140		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	20140		RunNo:	27385				
Prep Date:	7/7/2015		Analysis Date:	7/9/2015		SeqNo:	821530		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-20140		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 20140		RunNo: 27385					
Prep Date:	7/7/2015		Analysis Date: 7/9/2015		SeqNo: 821531		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1507158

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

7/3/2015 9:45:00 AM

Completed By: Lindsay Mangin

7/6/2015 8:34:53 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 <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 6. Sample(s) in proper container(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Sufficient sample volume for indicated test(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Was preservative added to bottles? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 10. VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | # of preserved bottles checked for pH:
Adjusted?
Checked by: |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 14. Is it clear what analyses were requested? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

Special Handling (if applicable)

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

Person Notified:

Date _____

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☒ X Standard ☐ Level 4 (Full Validation)

☐ Other

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Monthly R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: ☒ Yes ☐ No

Sample Temperature: 29.4°C Z, I

Date Time Matrix Sample Request ID

7-1-15 3:02pm liquid TEMPORARY R.O.

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-1-15 3:02pm

7-2-15 11am

Date Time

Date Time

Relinquished by: Elizabeth Salsberry

Relinquished by: Elizabeth Salsberry

Relinquished by:

Received by:

Received by:

Received by:

Date Time

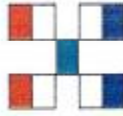
Date Time

Date Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethene; 1,1,2,2-Trichloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dichloroethane; 1,2-Dichloroethene; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
SVOCs: benz(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

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



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

8260B: WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate	Chloride	Fluoride	Nitrate/Nitrite	Total Dissolved Solids
X	X	X	X	X	X	X	X	X	X	X	X	X

Container Type and #

2 - 500ml P

3-40ml VOA HCL

1-500ml P HNO3

1-125ml P HNO3

1-500ml P NaOH

2- 1L P HNO3

3-40ml VOA HCL

2 - 1L Glass unpres

1 - 1L Glass unpres

2-40ml VOA unpres

2-40ml VOA HCL

Preservative Type

1-unpres H2SO4

HCL

HNO3

HNO3

NaOH

HNO3

HCL

unpres

unpres

unpres

HCL

HEAL No.

1507158

-001



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Biannual RO Reject Sample Details Attachment



The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	7/1/2015 @ 3:02 pm
End Date and Time	7/1/2015 @ 3:11 pm

Sample Type
Grab <input checked="" type="checkbox"/>
Time Weighted Composite <input type="checkbox"/>
Flow Weighted Composite <input type="checkbox"/>

Physical Property
Solid <input type="checkbox"/>
Liquid <input checked="" type="checkbox"/>
Sludge <input type="checkbox"/>

Type of Sampler Directly to sample jars

Outfall / Sample Location	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
---------------------------	--

Container	Size	Material	# of Containers	Preservatives								Analysis and/or Method Requested pH, Cl, F, SO4, NO2/NO3, TDS
				NaCl (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	
1	500ml	Plastic	2	X			X					8015 GRO
2	40ml	VOA	3		X							6020 total metals, 7470 Hg
3	500ml	Plastic	1			X						6020 Dissolved Metals
4	125ml	Plastic	1			X						Cyanide
5	500ml	Plastic	2					X				Radium 226/228
6	1L	Plastic	3			X						8280 see attached list
7	40ml	VOA	2		X							8270 see attached list
8	1L	Glass	1	X								8082 PCBs
9	1L	Glass	2	X								8015 DRO
10	40ml	VOA	2	X								Radium 226/228
11	40ml	VOA	2		X							

Field Data (Weather, Observations, Etc)	7/1/2014 3:02 pm Temp. 93.2 °F, Humidity 26%, Wind Dir. SE, Wind Speed 9.2 mph, Conditions Clear
Date and Time:	

Field Temp 29.1 °C Field pH 7.65

Storage Method	Ice <input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	Ice <input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Wednesday, July 15, 2015 5:15 PM
To: Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott; Coons, Christina (Christie)
Subject: ACO Monthly Report for June 2015
Attachments: ACO Monthly report for June 150715.pdf

Jim & Carl,

Attached is the monthly report for June concerning the RO Reject.

Let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

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July 15, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – June 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's July 2015 monthly report, for the period of June 1-30, under the Order.

Specifically, this report covers the June 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire June reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from June 1 through June 30.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from June 1 through June 30.

Navajo has calculated a penalty of \$2,600 for June 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 26 days in June. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on June 5, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo is conducting a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015.

Navajo is currently evaluating alternative locations for the permitting and construction of a new non-hazardous waste injection well for use in disposal of Refinery fluids, including RO reject water. Navajo previously submitted an application for a Discharge Permit for the new injection well (WDW-4) on November 7, 2014. OCD notified Navajo that the application was administratively complete by letter dated April 23, 2015. On June 25, 2015, Navajo withdrew the OCD permit application to allow for further technical review regarding well locations and injection zones to confirm sufficient injection capacity to meet the refinery's needs. Navajo will provide a new application to OCD when the review is complete, and well location(s) are selected.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
6/1/2015	142	107	249	8537	61	2096	10633
6/2/2015	139	106	245	8400	60	2069	10469
6/3/2015	139	114	253	8674	60	2065	10739
6/4/2015	137	104	241	8263	79	2709	10972
6/5/2015	101	83	184	6309	116	3962	10271
6/6/2015	0	124	124	4251	70	2387	6638
6/7/2015	130	108	238	8160	62	2137	10297
6/8/2015	132	95	227	7783	63	2147	9930
6/9/2015	135	113	248	8503	59	2022	10525
6/10/2015	129	109	238	8160	51	1735	9895
6/11/2015	133	117	250	8571	52	1783	10354
6/12/2015	139	108	247	8469	52	1799	10268
6/13/2015	133	107	240	8229	56	1911	10140
6/14/2015	130	109	239	8194	57	1961	10155
6/15/2015	132	111	243	8331	59	2027	10358
6/16/2015	140	112	252	8640	60	2057	10697
6/17/2015	135	114	249	8537	60	2057	10594
6/18/2015	141	112	253	8674	61	2081	10755
6/19/2015	135	104	239	8194	61	2091	10285
6/20/2015	131	117	248	8503	64	2200	10703
6/21/2015	137	115	252	8640	64	2196	10836
6/22/2015	133	103	236	8091	65	2241	10332
6/23/2015	137	107	244	8366	60	2049	10415
6/24/2015	125	107	232	7954	55	1902	9856
6/25/2015	131	106	237	8126	59	2031	10157
6/26/2015	123	111	234	8023	63	2156	10179
6/27/2015	131	114	245	8400	63	2160	10560
6/28/2015	123	110	233	7989	63	2160	10149
6/29/2015	122	109	231	7920	64	2179	10099
6/30/2015	129	105	234	8023	64	2194	10217

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - June 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	26	\$2,600
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$2,600

Attachment 3
Analytical Lab Report



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

June 22, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly Temporary RO Reject

OrderNo.: 1506316

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/6/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506316**

Date Reported: **6/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly Temporary RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506316-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	6/17/2015 7:44:15 PM	R26904
Lead	ND	0.0010		mg/L	1	6/16/2015 7:43:36 PM	R26876
Selenium	0.0099	0.0010		mg/L	1	6/16/2015 7:43:36 PM	R26876
Uranium	0.0082	0.0010		mg/L	1	6/16/2015 7:43:36 PM	R26876
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	2.04	0.578		pCi/L	1	6/16/2015	R26972
Radium-226 ±	0.849	0.578		pCi/L	1	6/16/2015	R26972
Radium-228	0.384	0.696		pCi/L	1	6/16/2015	R26972
Radium-228 ±	0.345	0.696		pCi/L	1	6/16/2015	R26972
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	4.6	2.0	*	mg/L	20	6/8/2015 1:22:42 PM	R26695
Chloride	460	50		mg/L	100	6/10/2015 1:28:53 AM	R26721
Sulfate	2300	50		mg/L	100	6/10/2015 1:28:53 AM	R26721
Nitrate+Nitrite as N	1.8	1.0		mg/L	5	6/9/2015 4:16:18 AM	R26695
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4710	20.0	*	mg/L	1	6/10/2015 12:32:00 PM	19636
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	6/18/2015	R26972
SM4500-H+B: PH							Analyst: JRR
pH	8.03	1.68	H	pH units	1	6/9/2015 9:57:39 PM	R26740
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF
Aluminum	ND	0.020		mg/L	1	6/16/2015 5:05:13 PM	R26882
Barium	0.080	0.0020		mg/L	1	6/16/2015 5:05:13 PM	R26882
Boron	0.098	0.040		mg/L	1	6/16/2015 5:05:13 PM	R26882
Cadmium	ND	0.0020		mg/L	1	6/16/2015 5:05:13 PM	R26882
Chromium	0.0067	0.0060		mg/L	1	6/16/2015 5:05:13 PM	R26882
Cobalt	ND	0.0060		mg/L	1	6/16/2015 5:05:13 PM	R26882
Copper	ND	0.0060		mg/L	1	6/16/2015 5:05:13 PM	R26882
Iron	0.040	0.020		mg/L	1	6/16/2015 5:05:13 PM	R26882
Manganese	0.012	0.0020		mg/L	1	6/16/2015 5:05:13 PM	R26882
Molybdenum	ND	0.0080		mg/L	1	6/16/2015 5:05:13 PM	R26882
Nickel	ND	0.010		mg/L	1	6/16/2015 5:05:13 PM	R26882
Silver	ND	0.0050		mg/L	1	6/16/2015 5:05:13 PM	R26882
Zinc	0.030	0.010		mg/L	1	6/16/2015 5:05:13 PM	R26882
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	6/9/2015 3:13:06 PM	19630

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 21
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506316**

Date Reported: **6/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly Temporary RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506316-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	6/11/2015 5:16:00 PM	19674
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Aroclor 1221	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Aroclor 1232	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Aroclor 1242	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Aroclor 1248	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Aroclor 1254	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Aroclor 1260	ND	1.0		µg/L	1	6/12/2015 2:49:54 PM	19626
Surr: Decachlorobiphenyl	93.6	44.5-110		%REC	1	6/12/2015 2:49:54 PM	19626
Surr: Tetrachloro-m-xylene	82.8	31.8-95.7		%REC	1	6/12/2015 2:49:54 PM	19626
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	6/9/2015 10:08:27 PM	19616
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	6/9/2015 10:08:27 PM	19616
Surr: DNOP	105	76.5-150		%REC	1	6/9/2015 10:08:27 PM	19616
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	6/10/2015 6:06:50 PM	R26753
Surr: BFB	90.7	57.8-137		%REC	1	6/10/2015 6:06:50 PM	R26753
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	6/16/2015 12:08:51 PM	19627
1-Methylnaphthalene	ND	2.0		µg/L	1	6/16/2015 12:08:51 PM	19627
2-Methylnaphthalene	ND	2.0		µg/L	1	6/16/2015 12:08:51 PM	19627
Benzo(a)pyrene	ND	0.070		µg/L	1	6/16/2015 12:08:51 PM	19627
Surr: Benzo(e)pyrene	66.6	37.2-136		%REC	1	6/16/2015 12:08:51 PM	19627
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Toluene	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Ethylbenzene	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Carbon Tetrachloride	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Chloroform	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
1,1-Dichloroethane	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
1,1-Dichloroethene	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Methylene Chloride	ND	3.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506316**

Date Reported: **6/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly Temporary RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506316-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst: DJF		
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Vinyl chloride	ND	1.0		µg/L	1	6/13/2015 8:29:41 AM	R26817
Xylenes, Total	ND	1.5		µg/L	1	6/13/2015 8:29:41 AM	R26817
Surr: 1,2-Dichloroethane-d4	90.0	70-130		%REC	1	6/13/2015 8:29:41 AM	R26817
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	6/13/2015 8:29:41 AM	R26817
Surr: Dibromofluoromethane	96.9	70-130		%REC	1	6/13/2015 8:29:41 AM	R26817
Surr: Toluene-d8	100	70-130		%REC	1	6/13/2015 8:29:41 AM	R26817
TOTAL PHENOLICS BY SW-846 9067					Analyst: SCC		
Phenolics, Total Recoverable	ND	2.5		µg/L	1	6/18/2015	19794

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 21
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506316**Date Reported: **6/22/2015****CLIENT:** Navajo Refining Company**Client Sample ID:** Trip Blank**Project:** Monthly Temporary RO Reject**Collection Date:****Lab ID:** 1506316-002**Matrix:** TRIP BLANK**Received Date:** 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst: DJF		
Benzene	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Toluene	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Ethylbenzene	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Carbon Tetrachloride	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Chloroform	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,1-Dichloroethane	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,1-Dichloroethene	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Methylene Chloride	ND	3.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Vinyl chloride	ND	1.0		µg/L	1	6/13/2015 9:25:05 AM	R26817
Xylenes, Total	ND	1.5		µg/L	1	6/13/2015 9:25:05 AM	R26817
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%REC	1	6/13/2015 9:25:05 AM	R26817
Surr: 4-Bromofluorobenzene	98.6	70-130		%REC	1	6/13/2015 9:25:05 AM	R26817
Surr: Dibromofluoromethane	95.4	70-130		%REC	1	6/13/2015 9:25:05 AM	R26817
Surr: Toluene-d8	98.5	70-130		%REC	1	6/13/2015 9:25:05 AM	R26817

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 21
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: R26882		RunNo: 26882							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802272		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: R26882		RunNo: 26882							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802273		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	107	85	115			
Barium	0.50	0.0020	0.5000	0	99.3	85	115			
Boron	0.53	0.040	0.5000	0	105	85	115			
Cadmium	0.54	0.0020	0.5000	0	107	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Copper	0.49	0.0060	0.5000	0	97.4	85	115			
Iron	0.50	0.020	0.5000	0	99.7	85	115			
Manganese	0.48	0.0020	0.5000	0	96.4	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: R26876		RunNo: 26876							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802096		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: R26876		RunNo: 26876							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802099		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	96.3	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			
Uranium	0.012	0.00050	0.01250	0	96.9	85	115			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: R26876		RunNo: 26876							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802100		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: R26876		RunNo: 26876							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802101		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: R26904		RunNo: 26904							
Prep Date:	Analysis Date: 6/17/2015		SeqNo: 803447		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.9	85	115			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: R26904			RunNo: 26904						
Prep Date:	Analysis Date: 6/17/2015			SeqNo: 803448		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: R26904			RunNo: 26904						
Prep Date:	Analysis Date: 6/17/2015			SeqNo: 803449		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: Dissolved Metals						
Client ID: PBW	Batch ID: R26904			RunNo: 26904						
Prep Date:	Analysis Date: 6/17/2015			SeqNo: 803450		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. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19630		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	19630		RunNo:	26705				
Prep Date:	6/9/2015		Analysis Date:	6/9/2015		SeqNo:	795807		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-19630		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19630		RunNo: 26705					
Prep Date:	6/9/2015		Analysis Date: 6/9/2015		SeqNo: 795808		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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R26695		RunNo: 26695							
Prep Date:	Analysis Date: 6/8/2015		SeqNo: 795454		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R26695		RunNo: 26695							
Prep Date:	Analysis Date: 6/8/2015		SeqNo: 795455		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			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	100	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R26721		RunNo: 26721							
Prep Date:	Analysis Date: 6/9/2015		SeqNo: 796475		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R26721		RunNo: 26721							
Prep Date:	Analysis Date: 6/9/2015		SeqNo: 796476		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.1	0.50	5.000	0	103	90	110			
Sulfate	11	0.50	10.00	0	106	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19674		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	19674		RunNo:	26780				
Prep Date:	6/11/2015		Analysis Date:	6/11/2015		SeqNo:	798570		Units:		µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-19674		SampType: LCS		TestCode: EPA Method 8011/504.1: EDB					
Client ID:	LCSW		Batch ID: 19674		RunNo: 26780					
Prep Date:	6/11/2015		Analysis Date: 6/11/2015		SeqNo: 798571		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	109	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19616		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 19616		RunNo: 26673					
Prep Date:	6/8/2015		Analysis Date: 6/9/2015		SeqNo: 796030		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	0.94		1.000		94.1	76.5	150			

Sample ID	LCS-19616		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 19616		RunNo: 26673					
Prep Date:	6/8/2015		Analysis Date: 6/9/2015		SeqNo: 796031		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.3	60.1	156			
Surr: DNOP	0.45		0.5000		89.8	76.5	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R26753		RunNo: 26753							
Prep Date:	Analysis Date: 6/10/2015		SeqNo: 797263		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		88.9	57.8	137			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R26753		RunNo: 26753							
Prep Date:	Analysis Date: 6/10/2015		SeqNo: 797264		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.5	80	120			
Surr: BFB	21		20.00		103	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19626		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	19626		RunNo:	26808			
Prep Date:	6/9/2015		Analysis Date:	6/12/2015		SeqNo:	799539		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		72.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		63.2	31.8	95.7			

Sample ID	MB-19672		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	19672		RunNo:	26808			
Prep Date:	6/11/2015		Analysis Date:	6/12/2015		SeqNo:	799540		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	2.3		2.500		92.0	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		75.2	31.8	95.7			

Sample ID	LCS-19672		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	19672		RunNo:	26808			
Prep Date:	6/11/2015		Analysis Date:	6/12/2015		SeqNo:	799541		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	2.0		2.500		82.0	44.5	110			
Surr: Tetrachloro-m-xylene	1.8		2.500		70.4	31.8	95.7			

Sample ID	LCSD-19626		SampType:	LCSD		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSS02		Batch ID:	19626		RunNo:	26808			
Prep Date:	6/9/2015		Analysis Date:	6/12/2015		SeqNo:	799543		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	61.8	22.6	127	4.98	26.9	
Aroclor 1260	4.7	1.0	5.000	0	94.3	20.4	122	8.96	29.1	
Surr: Decachlorobiphenyl	1.7		2.500		69.2	44.5	110	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		58.4	31.8	95.7	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	LCS-19626		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 19626		RunNo: 26808					
Prep Date:	6/9/2015		Analysis Date: 6/12/2015		SeqNo: 799548		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	58.8	22.6	127			
Aroclor 1260	5.2	1.0	5.000	0	103	20.4	122			
Surr: Decachlorobiphenyl	1.9		2.500		74.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.7		2.500		66.4	31.8	95.7			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID rb1	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R26817		RunNo: 26817							
Prep Date:	Analysis Date: 6/12/2015		SeqNo: 799790		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID 100nglcs200T2lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R26817		RunNo: 26817							
Prep Date:	Analysis Date: 6/12/2015		SeqNo: 799792		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	95.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.8	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID MB-19627	SampType: MBLK		TestCode: EPA Method 8310: PAHs							
Client ID: PBW	Batch ID: 19627		RunNo: 26846							
Prep Date: 6/9/2015	Analysis Date: 6/16/2015		SeqNo: 801380		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		65.6	37.2	136			

Sample ID LCS-19627	SampType: LCS		TestCode: EPA Method 8310: PAHs							
Client ID: LCSW	Batch ID: 19627		RunNo: 26846							
Prep Date: 6/9/2015	Analysis Date: 6/16/2015		SeqNo: 801381		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	74	2.0	80.00	0	92.9	57.8	83.9			S
1-Methylnaphthalene	76	2.0	80.20	0	94.6	43.5	88.5			S
2-Methylnaphthalene	74	2.0	80.00	0	92.8	34.2	94.5			
Acenaphthylene	77	2.5	80.20	0	95.6	58.5	93.6			S
Acenaphthene	74	2.0	80.00	0	91.9	45.5	90.9			S
Fluorene	7.0	0.80	8.020	0	86.7	46.6	90.3			
Phenanthrene	3.6	0.60	4.020	0	89.1	47.2	102			
Anthracene	3.6	0.60	4.020	0	88.8	45.4	99.1			
Fluoranthene	7.3	0.30	8.020	0	90.8	45.3	101			
Pyrene	7.5	0.30	8.020	0	93.0	51.9	104			
Benz(a)anthracene	0.72	0.070	0.8020	0	89.8	46.9	104			
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1			
Benzo(b)fluoranthene	0.87	0.10	1.002	0	86.8	54.3	97.9			
Benzo(k)fluoranthene	0.46	0.070	0.5000	0	92.0	47.4	109			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	LCS-19627		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801381	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.46	0.070	0.5020	0	91.6	56.3	98.6			
Dibenz(a,h)anthracene	0.90	0.12	1.002	0	89.8	57.5	95.7			
Benzo(g,h,i)perylene	0.92	0.12	1.000	0	92.0	55.9	98.6			
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	90.8	52.8	95.3			
Surr: Benzo(e)pyrene	13		20.00		66.2	37.2	136			

Sample ID	LCSD-19627		SampType:	LCSD		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSS02		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801382	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	70	2.0	80.00	0	88.1	57.8	83.9	5.29	20	S
1-Methylnaphthalene	73	2.0	80.20	0	90.7	43.5	88.5	4.20	20	S
2-Methylnaphthalene	71	2.0	80.00	0	88.8	34.2	94.5	4.35	20	
Acenaphthylene	75	2.5	80.20	0	93.1	58.5	93.6	2.66	20	
Acenaphthene	72	2.0	80.00	0	89.8	45.5	90.9	2.37	20	
Fluorene	6.8	0.80	8.020	0	85.4	46.6	90.3	1.45	20	
Phenanthrene	3.6	0.60	4.020	0	89.8	47.2	102	0.834	24	
Anthracene	3.6	0.60	4.020	0	89.8	45.4	99.1	1.11	20	
Fluoranthene	7.4	0.30	8.020	0	91.9	45.3	101	1.23	20.9	
Pyrene	7.6	0.30	8.020	0	94.4	51.9	104	1.46	20.8	
Benz(a)anthracene	0.71	0.070	0.8020	0	88.5	46.9	104	1.40	20	
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1	0	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.3	97.9	1.16	20.6	
Benzo(k)fluoranthene	0.45	0.070	0.5000	0	90.0	47.4	109	2.20	20.8	
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6	2.20	20	
Dibenz(a,h)anthracene	0.87	0.12	1.002	0	86.8	57.5	95.7	3.39	20	
Benzo(g,h,i)perylene	0.89	0.12	1.000	0	89.0	55.9	98.6	3.31	20	
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	87.8	52.8	95.3	3.35	20	
Surr: Benzo(e)pyrene	14		20.00		69.4	37.2	136	0		

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19794		SampType: MBLK		TestCode: Total Phenolics by SW-846 9067					
Client ID:	PBW		Batch ID: 19794		RunNo: 26937					
Prep Date:	6/18/2015		Analysis Date: 6/18/2015		SeqNo: 804126		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-19794		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 19794		RunNo: 26937					
Prep Date:	6/18/2015		Analysis Date: 6/18/2015		SeqNo: 804127		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	108	64.4	135			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/18/2015		SeqNo:	805487		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R26972		RunNo: 26972					
Prep Date:			Analysis Date: 6/18/2015		SeqNo: 805488		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.501		0.5000	0	100	90	110			

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805490		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R26972		RunNo: 26972					
Prep Date:			Analysis Date: 6/16/2015		SeqNo: 805491		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.503		0.5000	0	101	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed			
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972			
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805511	Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.071	0.659								
Radium-226 ±	0.324	0.659								
Radium-228	0.112	0.774								
Radium-228 ±	0.344	0.774								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19636		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	19636		RunNo:	26730				
Prep Date:	6/9/2015		Analysis Date:	6/10/2015		SeqNo:	796757		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-19636		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 19636		RunNo: 26730					
Prep Date:	6/9/2015		Analysis Date: 6/10/2015		SeqNo: 796758		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1506316**

RcptNo: **1**

Received by/date:

Am 06/06/15

Logged By: **Ashley Gallegos**

6/6/2015 12:15:00 PM

Completed By: **Ashley Gallegos**

6/8/2015 9:51:07 AM

Reviewed By:

2/15 06/08/15

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? FedEx

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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: *8-2 or 12* unless noted

Adjusted?

Checked by: *JA*

Special Handling (if applicable)

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

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.8	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

M 88211-0159

Phone #: 575-748-3311

Mail or Fax#: 575-746-5451

A/QC Package:

Standard ☐ Level 4 (Full Validation)

Other ☐

EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Monthly Temporary RO Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salisbury

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.8

Date Time Matrix Sample Request ID

5-15 1:29 liquid 1354 06/08/15

5-15 1:29 1:29 South Field RO Reject

5-15 1:29 1:29 Discharge

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:27

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

5-15 1:29 1:29

Received by:

Elizabeth Salisbury

Date Time

06/15/15 12:15

Received by:

Robert Combs

Date Time

06/15/15 12:15

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2,2-Trichloroethane; 1,1,2-Trichloroethane; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

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



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

8260B: WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate	Chloride	Fluoride	Nitrate/Nitrite	Total Dissolved Solids	Air Bubbles (Y or N)
X	X	X	X	X	X	X	X	X	X	X	X	X	X

HEAL No.	15063110
Preservative Type	1-unpres H2SO4
Container Type and #	2 - 500ml P
3-40ml VOA	HCL
1-500ml P	HNO3
1-125ml P	HNO3
1-500ml P	NaOH
2- 1L P	HNO3
3-40ml VOA	HCL
2 - 1L Glass	unpres
1 - 1L Glass	unpres
2-40ml VOA	unpres
2-40ml VOA	HCL



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Monthly RO Reject
Sampler's Name	Elizabeth Salisbury
Sampler's Affiliation	Navajo Refining Co. LLC
Start Date and Time	6/5/2015 @ 1:25 pm
End Date and Time	6/5/2015 @ 1:54 pm

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler: Directly to sample jars

Parts / Sample Intervals: One

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Preservatives							Analysis and/or Method Requested
				Neat (None)	HCL	HNO3	H2SO4	NaCH	Na2S2O3	NaHSO4	
1	500ml	Plastic	2	X			X				
2	40ml	VOA	3		X						
3	500ml	Plastic	1			X					
4	125ml	Plastic	1			X					
5	500ml	Plastic	2					X			
6	1L	Plastic	3			X					
7	40ml	VOA	2		X						
8	1L	Glass	1	X							
9	1L	Glass	2	X							
10	40ml	VOA	2	X							
11	40ml	VOA	2		X						

Field Data (Weather, Observations, Etc):	6/5/2015 01:35 Tmp. 89.6, Humidity 38%, Wind Dir. SE, Wind Speed 16.1 mph, Conditions Clear
Date and Time:	

Field Temp. 25.9 C Field pH 7.94

Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

Shipping Media	
Ice	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>



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

June 22, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1506320

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/6/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506320**

Date Reported: **6/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506320-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
Lead	ND	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
Selenium	0.0062	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
Uranium	0.0053	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.59	0.615		pCi/L	1	6/16/2015	R26972
Radium-226 ±	0.712	0.615		pCi/L	1	6/16/2015	R26972
Radium-228	0.427	0.757		pCi/L	1	6/16/2015	R26972
Radium-228 ±	0.375	0.757		pCi/L	1	6/16/2015	R26972
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.9	0.10		mg/L	1	6/8/2015 1:35:07 PM	R26695
Chloride	380	10		mg/L	20	6/8/2015 2:12:21 PM	R26695
Sulfate	1800	25		mg/L	50	6/10/2015 1:41:18 AM	R26721
Nitrate+Nitrite as N	4.5	1.0		mg/L	5	6/9/2015 4:28:42 AM	R26695
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3640	20.0	*	mg/L	1	6/11/2015 4:07:00 PM	19650
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	6/16/2015	R26972
SM4500-H+B: PH							Analyst: JRR
pH	8.06	1.68	H	pH units	1	6/9/2015 10:02:04 PM	R26740
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF
Aluminum	ND	0.020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Barium	0.055	0.0020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Boron	0.092	0.040		mg/L	1	6/16/2015 5:09:17 PM	R26882
Cadmium	ND	0.0020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Chromium	0.0077	0.0060		mg/L	1	6/16/2015 5:09:17 PM	R26882
Cobalt	ND	0.0060		mg/L	1	6/16/2015 5:09:17 PM	R26882
Copper	ND	0.0060		mg/L	1	6/16/2015 5:09:17 PM	R26882
Iron	ND	0.020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Manganese	0.0021	0.0020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Molybdenum	ND	0.0080		mg/L	1	6/16/2015 5:09:17 PM	R26882
Nickel	ND	0.010		mg/L	1	6/16/2015 5:09:17 PM	R26882
Silver	ND	0.0050		mg/L	1	6/16/2015 5:09:17 PM	R26882
Zinc	0.042	0.010		mg/L	1	6/16/2015 5:09:17 PM	R26882
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	6/9/2015 3:15:08 PM	19630

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506320**

Date Reported: **6/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506320-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	6/11/2015 5:29:43 PM	19674
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1221	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1232	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1242	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1248	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1254	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1260	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Surr: Decachlorobiphenyl	81.2	44.5-110		%REC	1	6/12/2015 3:35:55 PM	19626
Surr: Tetrachloro-m-xylene	69.6	31.8-95.7		%REC	1	6/12/2015 3:35:55 PM	19626
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	6/9/2015 10:29:45 PM	19616
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	6/9/2015 10:29:45 PM	19616
Surr: DNOP	100	76.5-150		%REC	1	6/9/2015 10:29:45 PM	19616
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	6/10/2015 8:13:18 PM	R26753
Surr: BFB	89.2	57.8-137		%REC	1	6/10/2015 8:13:18 PM	R26753
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	6/16/2015 12:38:08 PM	19627
1-Methylnaphthalene	ND	2.0		µg/L	1	6/16/2015 12:38:08 PM	19627
2-Methylnaphthalene	ND	2.0		µg/L	1	6/16/2015 12:38:08 PM	19627
Benzo(a)pyrene	ND	0.070		µg/L	1	6/16/2015 12:38:08 PM	19627
Surr: Benzo(e)pyrene	73.2	37.2-136		%REC	1	6/16/2015 12:38:08 PM	19627
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Toluene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Ethylbenzene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Carbon Tetrachloride	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Chloroform	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1-Dichloroethane	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1-Dichloroethene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Methylene Chloride	ND	3.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506320**

Date Reported: **6/22/2015**

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506320-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Vinyl chloride	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Xylenes, Total	ND	1.5		µg/L	1	6/12/2015 5:41:45 AM	R26777
Surr: 1,2-Dichloroethane-d4	95.7	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
Surr: Dibromofluoromethane	96.0	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
Surr: Toluene-d8	102	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	6/18/2015	19794

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 22
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1506320**Date Reported: **6/22/2015****CLIENT:** Navajo Refining Company**Client Sample ID:** Trip Blank**Project:** Monthly RO Reject**Collection Date:****Lab ID:** 1506320-002**Matrix:** TRIP BLANK**Received Date:** 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Toluene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Ethylbenzene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Carbon Tetrachloride	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Chloroform	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1-Dichloroethane	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1-Dichloroethene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Methylene Chloride	ND	3.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Vinyl chloride	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Xylenes, Total	ND	1.5		µg/L	1	6/12/2015 7:07:57 AM	R26777
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777
Surr: Dibromofluoromethane	102	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777
Surr: Toluene-d8	103	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 22
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: R26882		RunNo: 26882							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802272		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: R26882		RunNo: 26882							
Prep Date:	Analysis Date: 6/16/2015		SeqNo: 802273		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	107	85	115			
Barium	0.50	0.0020	0.5000	0	99.3	85	115			
Boron	0.53	0.040	0.5000	0	105	85	115			
Cadmium	0.54	0.0020	0.5000	0	107	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Copper	0.49	0.0060	0.5000	0	97.4	85	115			
Iron	0.50	0.020	0.5000	0	99.7	85	115			
Manganese	0.48	0.0020	0.5000	0	96.4	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS			SampType: LCS		TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW			Batch ID: R26876		RunNo: 26876				
Prep Date:				Analysis Date: 6/16/2015		SeqNo: 802096		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	99.0	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26876		RunNo: 26876					
Prep Date:			Analysis Date: 6/16/2015		SeqNo: 802099		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	98.9	85	115			
Lead	0.012	0.00050	0.01250	0	96.3	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			
Uranium	0.012	0.00050	0.01250	0	96.9	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26876			RunNo: 26876					
Prep Date:		Analysis Date: 6/16/2015			SeqNo: 802100		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								
Uranium	ND	0.00050								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26876			RunNo: 26876					
Prep Date:		Analysis Date: 6/16/2015			SeqNo: 802101		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								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19630		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	19630		RunNo:	26705				
Prep Date:	6/9/2015		Analysis Date:	6/9/2015		SeqNo:	795807		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-19630		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19630		RunNo: 26705					
Prep Date:	6/9/2015		Analysis Date: 6/9/2015		SeqNo: 795808		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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R26695		RunNo: 26695							
Prep Date:	Analysis Date: 6/8/2015		SeqNo: 795454		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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R26695		RunNo: 26695							
Prep Date:	Analysis Date: 6/8/2015		SeqNo: 795455		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	4.8	0.50	5.000	0	96.7	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	100	90	110			

Sample ID 1506320-001EMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: South Field RO Reje	Batch ID: R26695		RunNo: 26695							
Prep Date:	Analysis Date: 6/8/2015		SeqNo: 795461		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.3	0.10	0.5000	2.860	84.6	75.3	111			

Sample ID 1506320-001EMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: South Field RO Reje	Batch ID: R26695		RunNo: 26695							
Prep Date:	Analysis Date: 6/8/2015		SeqNo: 795462		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.2	0.10	0.5000	2.860	77.6	75.3	111	1.07	20	

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R26721		RunNo: 26721							
Prep Date:	Analysis Date: 6/9/2015		SeqNo: 796475		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R26721		RunNo: 26721							
Prep Date:	Analysis Date: 6/9/2015		SeqNo: 796476		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	11	0.50	10.00	0	106	90	110			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19674		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	19674		RunNo:	26780				
Prep Date:	6/11/2015		Analysis Date:	6/11/2015		SeqNo:	798570		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-19674		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	19674		RunNo:	26780				
Prep Date:	6/11/2015		Analysis Date:	6/11/2015		SeqNo:	798571		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.11	0.010	0.1000	0	109	70	130				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19616		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 19616		RunNo: 26673					
Prep Date:	6/8/2015		Analysis Date: 6/9/2015		SeqNo: 796030		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	0.94		1.000		94.1	76.5	150			

Sample ID	LCS-19616		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 19616		RunNo: 26673					
Prep Date:	6/8/2015		Analysis Date: 6/9/2015		SeqNo: 796031		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.3	60.1	156			
Surr: DNOP	0.45		0.5000		89.8	76.5	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R26753		RunNo: 26753					
Prep Date:			Analysis Date: 6/10/2015		SeqNo: 797263		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		88.9	57.8	137			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R26753		RunNo: 26753					
Prep Date:			Analysis Date: 6/10/2015		SeqNo: 797264		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.5	80	120			
Surr: BFB	21		20.00		103	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19626		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	19626		RunNo:	26808			
Prep Date:	6/9/2015		Analysis Date:	6/12/2015		SeqNo:	799539		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		72.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		63.2	31.8	95.7			

Sample ID	MB-19672		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	19672		RunNo:	26808			
Prep Date:	6/11/2015		Analysis Date:	6/12/2015		SeqNo:	799540		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	2.3		2.500		92.0	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		75.2	31.8	95.7			

Sample ID	LCS-19672		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	19672		RunNo:	26808			
Prep Date:	6/11/2015		Analysis Date:	6/12/2015		SeqNo:	799541		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	2.0		2.500		82.0	44.5	110			
Surr: Tetrachloro-m-xylene	1.8		2.500		70.4	31.8	95.7			

Sample ID	LCSD-19626		SampType:	LCSD		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSS02		Batch ID:	19626		RunNo:	26808			
Prep Date:	6/9/2015		Analysis Date:	6/12/2015		SeqNo:	799543		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	61.8	22.6	127	4.98	26.9	
Aroclor 1260	4.7	1.0	5.000	0	94.3	20.4	122	8.96	29.1	
Surr: Decachlorobiphenyl	1.7		2.500		69.2	44.5	110	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		58.4	31.8	95.7	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS-19626		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 19626		RunNo: 26808					
Prep Date:	6/9/2015		Analysis Date: 6/12/2015		SeqNo: 799548		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	58.8	22.6	127			
Aroclor 1260	5.2	1.0	5.000	0	103	20.4	122			
Surr: Decachlorobiphenyl	1.9		2.500		74.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.7		2.500		66.4	31.8	95.7			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26777	RunNo:	26777					
Prep Date:		Analysis Date:	6/11/2015	SeqNo:	798456	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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26777	RunNo:	26777					
Prep Date:		Analysis Date:	6/11/2015	SeqNo:	798458	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	110	75.6	144			
Trichloroethene (TCE)	18	1.0	20.00	0	89.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID rb3	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R26777		RunNo: 26777							
Prep Date:	Analysis Date: 6/11/2015		SeqNo: 798468		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID 100ng lcs2	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R26777		RunNo: 26777							
Prep Date:	Analysis Date: 6/11/2015		SeqNo: 798470		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	92.9	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	1506320-001a ms	SampType:	MS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	South Field RO Reje	Batch ID:	R26777	RunNo:	26777					
Prep Date:		Analysis Date:	6/12/2015	SeqNo:	798483	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	110	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	1506320-001A MSD	SampType:	MSD	TestCode: EPA Method 8260B: VOLATILES						
Client ID:	South Field RO Reje	Batch ID:	R26777	RunNo: 26777						
Prep Date:		Analysis Date:	6/12/2015	SeqNo: 798484		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.9	70	130	6.43	20	
Toluene	20	1.0	20.00	0	102	70	130	0.642	20	
1,1-Dichloroethene	19	1.0	20.00	0	96.6	70	130	13.4	20	
Trichloroethene (TCE)	17	1.0	20.00	0	83.8	70	130	7.06	20	
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	
Surr: Dibromofluoromethane	9.3		10.00		92.9	70	130	0	0	
Surr: Toluene-d8	10		10.00		103	70	130	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19627		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801380	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		65.6	37.2	136			

Sample ID	LCS-19627		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801381	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	74	2.0	80.00	0	92.9	57.8	83.9			S
1-Methylnaphthalene	76	2.0	80.20	0	94.6	43.5	88.5			S
2-Methylnaphthalene	74	2.0	80.00	0	92.8	34.2	94.5			
Acenaphthylene	77	2.5	80.20	0	95.6	58.5	93.6			S
Acenaphthene	74	2.0	80.00	0	91.9	45.5	90.9			S
Fluorene	7.0	0.80	8.020	0	86.7	46.6	90.3			
Phenanthrene	3.6	0.60	4.020	0	89.1	47.2	102			
Anthracene	3.6	0.60	4.020	0	88.8	45.4	99.1			
Fluoranthene	7.3	0.30	8.020	0	90.8	45.3	101			
Pyrene	7.5	0.30	8.020	0	93.0	51.9	104			
Benz(a)anthracene	0.72	0.070	0.8020	0	89.8	46.9	104			
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1			
Benzo(b)fluoranthene	0.87	0.10	1.002	0	86.8	54.3	97.9			
Benzo(k)fluoranthene	0.46	0.070	0.5000	0	92.0	47.4	109			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS-19627		SampType: LCS			TestCode: EPA Method 8310: PAHs				
Client ID:	LCSW		Batch ID: 19627			RunNo: 26846				
Prep Date:	6/9/2015		Analysis Date: 6/16/2015			SeqNo: 801381	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.46	0.070	0.5020	0	91.6	56.3	98.6			
Dibenz(a,h)anthracene	0.90	0.12	1.002	0	89.8	57.5	95.7			
Benzo(g,h,i)perylene	0.92	0.12	1.000	0	92.0	55.9	98.6			
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	90.8	52.8	95.3			
Surr: Benzo(e)pyrene	13		20.00		66.2	37.2	136			

Sample ID	LCSD-19627		SampType: LCSD			TestCode: EPA Method 8310: PAHs				
Client ID:	LCSS02		Batch ID: 19627			RunNo: 26846				
Prep Date:	6/9/2015		Analysis Date: 6/16/2015			SeqNo: 801382	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	70	2.0	80.00	0	88.1	57.8	83.9	5.29	20	S
1-Methylnaphthalene	73	2.0	80.20	0	90.7	43.5	88.5	4.20	20	S
2-Methylnaphthalene	71	2.0	80.00	0	88.8	34.2	94.5	4.35	20	
Acenaphthylene	75	2.5	80.20	0	93.1	58.5	93.6	2.66	20	
Acenaphthene	72	2.0	80.00	0	89.8	45.5	90.9	2.37	20	
Fluorene	6.8	0.80	8.020	0	85.4	46.6	90.3	1.45	20	
Phenanthrene	3.6	0.60	4.020	0	89.8	47.2	102	0.834	24	
Anthracene	3.6	0.60	4.020	0	89.8	45.4	99.1	1.11	20	
Fluoranthene	7.4	0.30	8.020	0	91.9	45.3	101	1.23	20.9	
Pyrene	7.6	0.30	8.020	0	94.4	51.9	104	1.46	20.8	
Benz(a)anthracene	0.71	0.070	0.8020	0	88.5	46.9	104	1.40	20	
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1	0	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.3	97.9	1.16	20.6	
Benzo(k)fluoranthene	0.45	0.070	0.5000	0	90.0	47.4	109	2.20	20.8	
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6	2.20	20	
Dibenz(a,h)anthracene	0.87	0.12	1.002	0	86.8	57.5	95.7	3.39	20	
Benzo(g,h,i)perylene	0.89	0.12	1.000	0	89.0	55.9	98.6	3.31	20	
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	87.8	52.8	95.3	3.35	20	
Surr: Benzo(e)pyrene	14		20.00		69.4	37.2	136	0		

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19794		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	19794		RunNo:	26937				
Prep Date:	6/18/2015		Analysis Date:	6/18/2015		SeqNo:	804126		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-19794		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	19794		RunNo:	26937				
Prep Date:	6/18/2015		Analysis Date:	6/18/2015		SeqNo:	804127		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	22	2.5	20.00	0	108	64.4	135				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/18/2015		SeqNo:	805487		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R26972		RunNo: 26972					
Prep Date:			Analysis Date: 6/18/2015		SeqNo: 805488		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.501		0.5000	0	100	90	110			

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805490		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	LCSW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805491		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.503		0.5000	0	101	90	110				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R26972		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R26972		RunNo: 26972					
Prep Date:			Analysis Date: 6/16/2015		SeqNo: 805511		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.071	0.659								
Radium-226 ±	0.324	0.659								
Radium-228	0.112	0.774								
Radium-228 ±	0.344	0.774								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19650		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 19650		RunNo: 26772					
Prep Date:	6/10/2015		Analysis Date: 6/11/2015		SeqNo: 798169		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-19650		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 19650		RunNo: 26772					
Prep Date:	6/10/2015		Analysis Date: 6/11/2015		SeqNo: 798170		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1506320**

RcptNo: 1

Received by/date:

Jim 04/06/15

Logged By:

Ashley Gallegos

6/6/2012

Completed By:

Ashley Gallegos

6/8/2015 10:03:30 AM

Reviewed By:

[Signature] 04/08/15

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? FedEx

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: 6 (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: *[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	5.8	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Monthly RO Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: X Yes ☐ No

Sample Temperature: 5.8

Container Type and #

Preservative Type

HEAL No.

1500330

-001

2 - 500ml P

3-40ml VOA

1-500ml P

1-125ml P

1-500ml P

2- 1L P

3-40ml VOA

2 - 1L Glass

1 - 1L Glass

2-40ml VOA

2-40ml VOA

Trip Blank

-002

Date:

4/15/15

Time:

3pm

Relinquished by:

Elizabeth Salsberry

Date:

4/15/15

Time:

1215

Received by:

Robert Combs

Date:

4/15/15

Time:

1215

Relinquished by:

Elizabeth Salsberry

Date:

4/15/15

Time:

1215

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Robert Combs

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Robert Combs

Date:

4/15/15

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1215

Relinquished by:

Elizabeth Salsberry

Date:

4/15/15

Time:

1215

Received by:

Robert Combs

Date:

4/15/15

Time:



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Monthly RO Reject
Samplers Name	Elizabeth Salisbury
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	6/5/2015 @ 2:05 pm
End Date and Time	6/5/2015 @ 1:54 pm

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>
Parts / Sample Intervals	One

Physical Property	Solid <input type="checkbox"/>
	Liquid <input checked="" type="checkbox"/>
	Sludge <input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Preservatives							Analysis and/or Method Requested
				HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	
1	500ml	Plastic	2	X		X					
2	40ml	VOA	3	X							
3	500ml	Plastic	1		X						
4	125ml	Plastic	1		X						
5	500ml	Plastic	2				X				
6	1L	Plastic	3		X						
7	40ml	VOA	2	X							
8	1L	Glass	1	X							
9	1L	Glass	2	X							
10	40ml	VOA	2	X							
11	40ml	VOA	2	X							

Field Data (Weather, Observations, Etc):	6/5/2015 01:55 Tmp. 89.6 F, Humidity 38%, Wind Dir. SE, Wind Speed 17.3 mph. Conditions Clear
Date and Time:	

Field Temp. 25.7 C	Field pH 7.69
--------------------	---------------

Storage Method	Ice <input checked="" type="checkbox"/>
	Refrigerated <input type="checkbox"/>
	Other <input type="checkbox"/>

Shipping Media	Ice <input checked="" type="checkbox"/>
	Other <input type="checkbox"/>

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, May 15, 2015 9:58 AM
To: Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Cc: Marks, Allison, EMNRD; Brancard, Bill, EMNRD; McWatters, Denise; O'Brien, Robert (Bob) K.; Holder, Mike; Denton, Scott
Subject: RO Reject - Analytical Data
Attachments: Attachment 2b - Analytical Rpt PermRO collected 042815.pdf; Attachment 2a - Analytical Rpt TRO collected 042815.pdf

Jim & Carl,

Attached are the analytical data reports for the samples collected on April 28, 2015. The sample collection and this submittal of the reports are to meet requirements in Exhibit A.3 of the ACO.

Let me know if you have any questions.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487

Scott.Denton@HollyFrontier.com

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

May 13, 2015

Scott Denton

Navajo Refining Company

P.O. Box 159

Artesia, NM 88211-0159

TEL: (575) 748-3311

FAX

RE: Monthly RO Reject

OrderNo.: 1504C23

Dear Scott Denton:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/29/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C23**

Date Reported: **5/13/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 4/28/2015 8:30:00 AM

Lab ID: 1504C23-001

Matrix: AQUEOUS

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8011/504.1: EDB						
1,2-Dibromoethane	ND	0.010		µg/L	1	4/30/2015 5:05:45 PM
EPA METHOD 8082: PCB'S						
Aroclor 1016	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Aroclor 1221	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Aroclor 1232	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Aroclor 1242	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Aroclor 1248	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Aroclor 1254	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Aroclor 1260	ND	1.0		µg/L	1	5/5/2015 3:05:44 PM
Surr: Decachlorobiphenyl	96.4	44.5-110		%REC	1	5/5/2015 3:05:44 PM
Surr: Tetrachloro-m-xylene	107	31.8-95.7	S	%REC	1	5/5/2015 3:05:44 PM
EPA METHOD 8015D: DIESEL RANGE						
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/29/2015 3:54:05 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/29/2015 3:54:05 PM
Surr: DNOP	106	76.5-150		%REC	1	4/29/2015 3:54:05 PM
EPA METHOD 8015D: GASOLINE RANGE						
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	5/4/2015 3:32:42 PM
Surr: BFB	94.3	80-120		%REC	1	5/4/2015 3:32:42 PM
EPA METHOD 8310: PAHS						
Naphthalene	ND	2.0		µg/L	1	5/5/2015 11:03:03 AM
1-Methylnaphthalene	ND	2.0		µg/L	1	5/5/2015 11:03:03 AM
2-Methylnaphthalene	ND	2.0		µg/L	1	5/5/2015 11:03:03 AM
Benzo(a)pyrene	ND	0.070		µg/L	1	5/5/2015 11:03:03 AM
Surr: Benzo(e)pyrene	94.8	30.8-125		%REC	1	5/5/2015 11:03:03 AM
EPA METHOD 300.0: ANIONS						
Fluoride	2.9	2.0		mg/L	20	4/29/2015 3:12:59 PM
Chloride	52	10		mg/L	20	4/29/2015 3:12:59 PM
Nitrogen, Nitrate (As N)	2.1	2.0		mg/L	20	4/29/2015 3:12:59 PM
Sulfate	1500	50		mg/L	100	5/6/2015 12:47:21 AM
EPA METHOD 200.7: DISSOLVED METALS						
Aluminum	ND	0.020		mg/L	1	4/29/2015 6:12:35 PM
Barium	0.062	0.0020		mg/L	1	4/29/2015 6:12:35 PM
Boron	0.10	0.040		mg/L	1	4/29/2015 6:12:35 PM
Cadmium	ND	0.0020		mg/L	1	4/30/2015 1:03:21 PM
Chromium	ND	0.0060		mg/L	1	4/29/2015 6:12:35 PM
Cobalt	ND	0.0060		mg/L	1	4/29/2015 6:12:35 PM

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

Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C23**Date Reported: **5/13/2015****CLIENT:** Navajo Refining Company**Client Sample ID:** Temporary R.O.**Project:** Monthly RO Reject**Collection Date:** 4/28/2015 8:30:00 AM**Lab ID:** 1504C23-001**Matrix:** AQUEOUS**Received Date:** 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: JLF
Copper	ND	0.0060		mg/L	1	4/29/2015 6:12:35 PM
Iron	ND	0.020		mg/L	1	4/29/2015 6:12:35 PM
Manganese	ND	0.0020		mg/L	1	4/29/2015 6:12:35 PM
Molybdenum	ND	0.0080		mg/L	1	4/30/2015 1:03:21 PM
Nickel	ND	0.010		mg/L	1	4/29/2015 6:12:35 PM
Silver	ND	0.0050		mg/L	1	4/30/2015 1:03:21 PM
Zinc	0.11	0.010		mg/L	1	4/29/2015 6:12:35 PM
EPA 200.8: DISSOLVED METALS						Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	5/7/2015 2:26:28 PM
Lead	ND	0.0010		mg/L	1	5/5/2015 11:01:02 AM
Selenium	0.0088	0.0010		mg/L	1	5/5/2015 11:01:02 AM
Uranium	0.0066	0.0010		mg/L	1	5/5/2015 11:01:02 AM
EPA METHOD 245.1: MERCURY						Analyst: MED
Mercury	ND	0.00020		mg/L	1	5/4/2015 2:00:03 PM
EPA METHOD 8260B: VOLATILES						Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Toluene	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Chloroform	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Methylene Chloride	ND	3.0		µg/L	1	4/29/2015 5:03:52 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/29/2015 5:03:52 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Vinyl chloride	ND	1.0		µg/L	1	4/29/2015 5:03:52 PM
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 5:03:52 PM
Surr: 1,2-Dichloroethane-d4	92.3	70-130		%REC	1	4/29/2015 5:03:52 PM
Surr: 4-Bromofluorobenzene	91.6	70-130		%REC	1	4/29/2015 5:03:52 PM
Surr: Dibromofluoromethane	98.8	70-130		%REC	1	4/29/2015 5:03:52 PM
Surr: Toluene-d8	102	70-130		%REC	1	4/29/2015 5:03:52 PM

TOTAL PHENOLICS BY SW-846 9067Analyst: **SCC**

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

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C23**

Date Reported: **5/13/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 4/28/2015 8:30:00 AM

Lab ID: 1504C23-001

Matrix: AQUEOUS

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	4/30/2015
EPA 335.4: TOTAL CYANIDE SUBBED						Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	5/5/2015
SM4500-H+B: PH						Analyst: JRR
pH	7.92	1.68	H	pH units	1	5/5/2015 5:53:07 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	3390	20.0	*	mg/L	1	5/1/2015 3:30:00 PM

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

Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C23

Date Reported: 5/13/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1504C23-002

Matrix: TRIP BLANK

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8011/504.1: EDB						Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	4/30/2015 5:19:35 PM
EPA METHOD 8260B: VOLATILES						Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Toluene	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Chloroform	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Methylene Chloride	ND	3.0		µg/L	1	4/29/2015 5:32:34 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/29/2015 5:32:34 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Vinyl chloride	ND	1.0		µg/L	1	4/29/2015 5:32:34 PM
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 5:32:34 PM
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%REC	1	4/29/2015 5:32:34 PM
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	4/29/2015 5:32:34 PM
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/29/2015 5:32:34 PM
Surr: Toluene-d8	104	70-130		%REC	1	4/29/2015 5:32:34 PM

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

Qualifiers:

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1504C23

Pace Project No.: 30147056

Sample: 1504C23-001H Temporary Lab ID: 30147056001 Collected: 04/28/15 08:30 Received: 05/01/15 09:35 Matrix: Water
R.O.

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.41 ± 0.654 (0.675) C:NA T:80%	pCi/L	05/13/15 10:06	13982-63-3	
Radium-228	EPA 904.0	0.441 ± 0.439 (0.877) C:75% T:74%	pCi/L	05/11/15 17:31	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1504C23
Pace Project No.: 30147056

QC Batch:	RADC/24384	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	30147056001		

METHOD BLANK:	890250	Matrix:	Water
Associated Lab Samples:	30147056001		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.437 ± 0.426 (0.869) C:70% T:70%	pCi/L	05/11/15 17:33	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1504C23
Pace Project No.: 30147056

QC Batch:	RADC/24322	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	30147056001		

METHOD BLANK:	888781	Matrix:	Water
Associated Lab Samples:	30147056001		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.256 ± 0.438 (0.767) C:NA T:98%	pCi/L	05/13/15 09:55	

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R25851			RunNo: 25851				
Prep Date:			Analysis Date: 4/29/2015			SeqNo: 766029		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R25851			RunNo: 25851				
Prep Date:			Analysis Date: 4/29/2015			SeqNo: 766030		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.51	0.020	0.5000	0	103	85	115			
Barium	0.47	0.0020	0.5000	0	93.0	85	115			
Boron	0.49	0.040	0.5000	0	97.9	85	115			
Chromium	0.48	0.0060	0.5000	0	95.5	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Copper	0.47	0.0060	0.5000	0	94.3	85	115			
Iron	0.47	0.020	0.5000	0	94.6	85	115			
Manganese	0.44	0.0020	0.5000	0	88.9	85	115			
Nickel	0.48	0.010	0.5000	0	96.6	85	115			
Zinc	0.48	0.010	0.5000	0	95.6	85	115			

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R25881			RunNo: 25881				
Prep Date:			Analysis Date: 4/30/2015			SeqNo: 767040		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Molybdenum	ND	0.0080								
Silver	ND	0.0050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R25881			RunNo: 25881				
Prep Date:			Analysis Date: 4/30/2015			SeqNo: 767041		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Molybdenum	0.49	0.0080	0.5000	0	97.4	85	115			
Silver	0.088	0.0050	0.1000	0	87.9	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS			SampType:	LCS			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW			Batch ID:	R25950			RunNo: 25950					
Prep Date:				Analysis Date:	5/5/2015			SeqNo:	769414		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Lead	0.024	0.0010	0.02500	0	96.4	85	115						
Selenium	0.024	0.0010	0.02500	0	94.9	85	115						
Uranium	0.025	0.0010	0.02500	0	98.7	85	115						

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R25950			RunNo: 25950					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 769415		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26042		RunNo: 26042					
Prep Date:			Analysis Date: 5/7/2015		SeqNo: 772040		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26042			RunNo: 26042					
Prep Date:		Analysis Date: 5/7/2015			SeqNo: 772041		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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18982	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	18982	RunNo:	25930					
Prep Date:	4/30/2015	Analysis Date:	5/4/2015	SeqNo:	768647	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-18982	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	18982	RunNo:	25930					
Prep Date:	4/30/2015	Analysis Date:	5/4/2015	SeqNo:	768648	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R25872	RunNo:	25872					
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766806	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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R25872	RunNo:	25872					
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766807	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.46	0.10	0.5000	0	92.4	90	110			
Chloride	4.5	0.50	5.000	0	91.0	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.2	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R25994	RunNo:	25994					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770620	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R25994	RunNo:	25994					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770621	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.7	0.50	10.00	0	97.2	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18974		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	18974		RunNo:	25898				
Prep Date:	4/30/2015		Analysis Date:	4/30/2015		SeqNo:	767691		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-18974		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	18974		RunNo:	25898				
Prep Date:	4/30/2015		Analysis Date:	4/30/2015		SeqNo:	767692		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	70	130				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18947		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 18947		RunNo: 25835					
Prep Date:	4/29/2015		Analysis Date: 4/29/2015		SeqNo: 766304		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		109	76.5	150			

Sample ID	LCS-18947		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18947		RunNo: 25835					
Prep Date:	4/29/2015		Analysis Date: 4/29/2015		SeqNo: 766305		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	0.57		0.5000		115	76.5	150			

Sample ID	1504C23-001LMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	Temporary R.O.		Batch ID: 18947		RunNo: 25835					
Prep Date:	4/29/2015		Analysis Date: 4/29/2015		SeqNo: 766307		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	75.9	164			
Surr: DNOP	0.61		0.5000		121	76.5	150			

Sample ID	1504C23-001LMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	Temporary R.O.		Batch ID: 18947		RunNo: 25835					
Prep Date:	4/29/2015		Analysis Date: 4/29/2015		SeqNo: 766308		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	111	75.9	164	2.80	22.1	
Surr: DNOP	0.61		0.5000		122	76.5	150	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18997		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 18997		RunNo: 25944					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769049		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.2		2.500		87.2	44.5	110			
Surr: Tetrachloro-m-xylene	2.4		2.500		97.6	31.8	95.7			S

Sample ID	LCS-18997		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 18997		RunNo: 25944					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769942		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.9	1.0	5.000	0	98.7	22.6	127			
Aroclor 1260	5.1	1.0	5.000	0	102	20.4	122			
Surr: Decachlorobiphenyl	2.9		2.500		114	44.5	110			S
Surr: Tetrachloro-m-xylene	4.2		2.500		169	31.8	95.7			S

Sample ID	LCSD-18997		SampType: LCSD		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02		Batch ID: 18997		RunNo: 25944					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769944		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.6	1.0	5.000	0	93.0	22.6	127	6.03	26.9	
Aroclor 1260	5.3	1.0	5.000	0	107	20.4	122	4.45	29.1	
Surr: Decachlorobiphenyl	3.0		2.500		118	44.5	110	0	0	S
Surr: Tetrachloro-m-xylene	3.8		2.500		150	31.8	95.7	0	0	S

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R25860			RunNo: 25860					
Prep Date:		Analysis Date: 4/29/2015			SeqNo: 766354		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.6	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	108	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	98.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R25860			RunNo: 25860					
Prep Date:		Analysis Date: 4/29/2015			SeqNo: 766361		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.9		10.00		99.2	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18998		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	18998		RunNo:	25938			
Prep Date:	5/1/2015		Analysis Date:	5/5/2015		SeqNo:	769391	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	14		20.00		71.8	30.8	125			

Sample ID	LCS-18998		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	18998		RunNo:	25938			
Prep Date:	5/1/2015		Analysis Date:	5/5/2015		SeqNo:	769392	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	55	2.0	80.00	0	69.3	41	76.8			
1-Methylnaphthalene	57	2.0	80.20	0	71.0	24.7	81			
2-Methylnaphthalene	56	2.0	80.00	0	70.4	17.4	81.9			
Acenaphthylene	60	2.5	80.20	0	75.4	50.3	77.5			
Acenaphthene	57	2.0	80.00	0	71.8	27.7	81.1			
Fluorene	5.8	0.80	8.020	0	72.8	34.2	75.1			
Phenanthrene	2.9	0.60	4.020	0	72.4	44.6	88.3			
Anthracene	2.9	0.60	4.020	0	72.1	41.9	85.3			
Fluoranthene	6.1	0.30	8.020	0	76.2	40.6	88			
Pyrene	6.6	0.30	8.020	0	82.8	41	86.6			
Benz(a)anthracene	0.62	0.070	0.8020	0	77.3	43.8	86.7			
Chrysene	3.1	0.20	4.020	0	76.9	44.5	80.7			
Benzo(b)fluoranthene	0.81	0.10	1.002	0	80.8	44.3	87.1			
Benzo(k)fluoranthene	0.39	0.070	0.5000	0	78.0	39.9	94.3			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS-18998			SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW			Batch ID:	18998		RunNo:	25938			
Prep Date:	5/1/2015			Analysis Date:	5/5/2015		SeqNo:	769392		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzo(a)pyrene	0.39	0.070	0.5020	0	77.7	44	86.5				
Dibenz(a,h)anthracene	0.78	0.12	1.002	0	77.8	48.8	83.6				
Benzo(g,h,i)perylene	0.83	0.12	1.000	0	83.0	43.6	84.5				
Indeno(1,2,3-cd)pyrene	1.6	0.25	2.004	0	77.3	49.2	91.1				
Surr: Benzo(e)pyrene	21		20.00		106	30.8	125				

Sample ID	LCSD-18998			SampType:	LCSD		TestCode: EPA Method 8310: PAHs				
Client ID:	LCSS02			Batch ID:	18998		RunNo: 25938				
Prep Date:	5/1/2015			Analysis Date:	5/5/2015		SeqNo: 769393		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	58	2.0	80.00	0	72.7	41	76.8	4.75	20		
1-Methylnaphthalene	60	2.0	80.20	0	74.4	24.7	81	4.68	20		
2-Methylnaphthalene	59	2.0	80.00	0	73.8	17.4	81.9	4.70	20		
Acenaphthylene	63	2.5	80.20	0	78.7	50.3	77.5	4.29	20	S	
Acenaphthene	60	2.0	80.00	0	74.9	27.7	81.1	4.26	20		
Fluorene	6.1	0.80	8.020	0	75.7	34.2	75.1	3.86	20	S	
Phenanthrene	3.1	0.60	4.020	0	76.1	44.6	88.3	5.03	24		
Anthracene	3.0	0.60	4.020	0	75.9	41.9	85.3	5.04	20		
Fluoranthene	6.4	0.30	8.020	0	79.9	40.6	88	4.79	20.9		
Pyrene	7.0	0.30	8.020	0	86.8	41	86.6	4.71	20.8	S	
Benz(a)anthracene	0.65	0.070	0.8020	0	81.0	43.8	86.7	4.72	20		
Chrysene	3.3	0.20	4.020	0	80.8	44.5	80.7	5.05	20	S	
Benzo(b)fluoranthene	0.84	0.10	1.002	0	83.8	44.3	87.1	3.64	20.6		
Benzo(k)fluoranthene	0.41	0.070	0.5000	0	82.0	39.9	94.3	5.00	20.8		
Benzo(a)pyrene	0.41	0.070	0.5020	0	81.7	44	86.5	5.00	20		
Dibenz(a,h)anthracene	0.83	0.12	1.002	0	82.8	48.8	83.6	6.21	20		
Benzo(g,h,i)perylene	0.87	0.12	1.000	0	87.0	43.6	84.5	4.71	20	S	
Indeno(1,2,3-cd)pyrene	1.6	0.25	2.004	0	81.3	49.2	91.1	5.03	20		
Surr: Benzo(e)pyrene	22		20.00		112	30.8	125	0			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18972		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	18972		RunNo:	25901				
Prep Date:	4/30/2015		Analysis Date:	4/30/2015		SeqNo:	767792		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-18972		SampType: LCS		TestCode: Total Phenolics by SW-846 9067					
Client ID:	LCSW		Batch ID: 18972		RunNo: 25901					
Prep Date:	4/30/2015		Analysis Date: 4/30/2015		SeqNo: 767793		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	109	75.7	126			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R26153		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26153		RunNo:	26153				
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	775896	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26153		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R26153		RunNo: 26153					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 775897		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.500		0.5000	0	100	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C23

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18979		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	18979		RunNo:	25912				
Prep Date:	4/30/2015		Analysis Date:	5/1/2015		SeqNo:	768004		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-18979		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 18979		RunNo: 25912					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 768005		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	999	20.0	1000	0	99.9	80	120			

Qualifiers:

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

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH 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: NAVAJO REFINING CO

Work Order Number: 1504C23

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/29/2015 9:15:00 AM

Completed By: Lindsay Mangin

4/29/2015 9:48:07 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 ☒

CS 04/29/15

No VOA Vials

Samples -002A + -002I have bubbles.

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:

5/1
(<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:

18. Cooler Information

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

Chain-of-Custody Record

Client: Navajo Refining Co.

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-748-5451

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation:

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Monthly RO Reject

Project #: P.O. # 167796

Project Manager:

Scott Denton / Robert Combs

Sampler: Elizabeth Salsberry

On Ice: ☒ Yes ☐ No

Sample Temperature: 10°C

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

4/28/15 8:30AM Ag Temporary R.O.

2 - 500ml P

1-unpres H2SO4

-001

4/28/15 8:30AM

3-40ml VOA

HCL

-001

4/28/15 8:30AM

1-500ml P

HNO3

-001

4/28/15 8:30AM

1-125ml P

HNO3

-001

4/28/15 8:30AM

1-500ml P

NaOH

-001

4/28/15 8:30AM

2-1L P

HNO3

-001

4/28/15 8:30AM

3-40ml VOA

HCL

-001

4/28/15 8:30AM

2 - 1L Glass

unpres

-001

4/28/15 8:30AM

1 - 1L Glass

unpres

-001

4/28/15 8:30AM

2-40ml VOA

unpres

-001

4/28/15 8:30AM

2-40ml VOA

HCL

-002

Date Time

Received by:

Date Time

4/28/15 10:45am

Relinquished by: Elizabeth Salsberry

04/29/15 0915

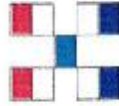
Date Time

Received by:

Date Time

Remarks: Send results to Scott Denton, Mike Holder, Micki Schultz, Robert Combs and Andrew Contreras.

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



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

See Attachment

[illegible][illegible]

1000

2000



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

May 13, 2015

Scott Denton

Navajo Refining Company

P.O. Box 159

Artesia, NM 88211-0159

TEL: (575) 748-3311

FAX

RE: Monthly RO Reject

OrderNo.: 1504C24

Dear Scott Denton:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/29/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C24

Date Reported: 5/13/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O.

Project: Monthly RO Reject

Collection Date: 4/28/2015 8:45:00 AM

Lab ID: 1504C24-001

Matrix: AQUEOUS

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	4/30/2015 5:33:16 PM	18974
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Aroclor 1221	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Aroclor 1232	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Aroclor 1242	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Aroclor 1248	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Aroclor 1254	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Aroclor 1260	ND	1.0		µg/L	1	5/5/2015 3:50:42 PM	18997
Surr: Decachlorobiphenyl	115	44.5-110	S	%REC	1	5/5/2015 3:50:42 PM	18997
Surr: Tetrachloro-m-xylene	126	31.8-95.7	S	%REC	1	5/5/2015 3:50:42 PM	18997
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/29/2015 4:57:42 PM	18947
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/29/2015 4:57:42 PM	18947
Surr: DNOP	113	76.5-150		%REC	1	4/29/2015 4:57:42 PM	18947
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	5/4/2015 4:01:53 PM	R25939
Surr: BFB	87.5	80-120		%REC	1	5/4/2015 4:01:53 PM	R25939
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	5/5/2015 11:32:18 AM	18998
1-Methylnaphthalene	ND	2.0		µg/L	1	5/5/2015 11:32:18 AM	18998
2-Methylnaphthalene	ND	2.0		µg/L	1	5/5/2015 11:32:18 AM	18998
Benzo(a)pyrene	ND	0.070		µg/L	1	5/5/2015 11:32:18 AM	18998
Surr: Benzo(e)pyrene	81.0	30.8-125		%REC	1	5/5/2015 11:32:18 AM	18998
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.2	0.10		mg/L	1	4/29/2015 3:25:23 PM	R25872
Chloride	37	10		mg/L	20	4/29/2015 4:02:38 PM	R25872
Nitrogen, Nitrate (As N)	1.1	0.10		mg/L	1	4/29/2015 3:25:23 PM	R25872
Sulfate	1100	25		mg/L	50	5/6/2015 12:59:46 AM	R25994
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF
Aluminum	ND	0.020		mg/L	1	4/29/2015 6:14:42 PM	R25851
Barium	0.041	0.0020		mg/L	1	4/29/2015 6:14:42 PM	R25851
Boron	0.089	0.040		mg/L	1	4/29/2015 6:14:42 PM	R25851
Cadmium	ND	0.0020		mg/L	1	4/30/2015 1:05:27 PM	R25881
Chromium	ND	0.0060		mg/L	1	4/29/2015 6:14:42 PM	R25851
Cobalt	ND	0.0060		mg/L	1	4/29/2015 6:14:42 PM	R25851

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C24

Date Reported: 5/13/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O.

Project: Monthly RO Reject

Collection Date: 4/28/2015 8:45:00 AM

Lab ID: 1504C24-001

Matrix: AQUEOUS

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF
Copper	ND	0.0060		mg/L	1	4/29/2015 6:14:42 PM	R25851
Iron	ND	0.020		mg/L	1	4/29/2015 6:14:42 PM	R25851
Manganese	ND	0.0020		mg/L	1	4/29/2015 6:14:42 PM	R25851
Molybdenum	ND	0.0080		mg/L	1	4/30/2015 1:05:27 PM	R25881
Nickel	ND	0.010		mg/L	1	4/29/2015 6:14:42 PM	R25851
Silver	ND	0.0050		mg/L	1	4/30/2015 1:05:27 PM	R25881
Zinc	0.075	0.010		mg/L	1	4/29/2015 6:14:42 PM	R25851
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	5/7/2015 2:35:40 PM	R26042
Lead	ND	0.0010		mg/L	1	5/5/2015 11:04:05 AM	R25950
Selenium	0.0053	0.0010		mg/L	1	5/5/2015 11:04:05 AM	R25950
Uranium	0.0042	0.0010		mg/L	1	5/5/2015 11:04:05 AM	R25950
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	5/4/2015 2:01:49 PM	18982
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Toluene	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Carbon Tetrachloride	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Chloroform	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,1-Dichloroethane	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,1-Dichloroethene	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Methylene Chloride	ND	3.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Vinyl chloride	ND	1.0		µg/L	1	4/29/2015 6:01:15 PM	R25860
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 6:01:15 PM	R25860
Surr: 1,2-Dichloroethane-d4	89.8	70-130		%REC	1	4/29/2015 6:01:15 PM	R25860
Surr: 4-Bromofluorobenzene	99.8	70-130		%REC	1	4/29/2015 6:01:15 PM	R25860
Surr: Dibromofluoromethane	92.8	70-130		%REC	1	4/29/2015 6:01:15 PM	R25860
Surr: Toluene-d8	103	70-130		%REC	1	4/29/2015 6:01:15 PM	R25860
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C24**

Date Reported: **5/13/2015**

CLIENT: Navajo Refining Company

Client Sample ID: R.O.

Project: Monthly RO Reject

Collection Date: 4/28/2015 8:45:00 AM

Lab ID: 1504C24-001

Matrix: AQUEOUS

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	4/30/2015	18972
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	5/5/2015	R26153
SM4500-H+B: PH							Analyst: JRR
pH	8.09	1.68	H	pH units	1	5/5/2015 5:57:25 PM	R25990
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2190	20.0	*	mg/L	1	5/1/2015 3:30:00 PM	18979

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 20
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C24**

Date Reported: **5/13/2015**

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1504C24-002

Matrix: TRIP BLANK

Received Date: 4/29/2015 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	4/30/2015 5:46:54 PM	18974
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Toluene	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Carbon Tetrachloride	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Chloroform	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,1-Dichloroethane	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,1-Dichloroethene	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Methylene Chloride	ND	3.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Vinyl chloride	ND	1.0		µg/L	1	4/29/2015 6:29:57 PM	R25860
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 6:29:57 PM	R25860
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%REC	1	4/29/2015 6:29:57 PM	R25860
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/29/2015 6:29:57 PM	R25860
Surr: Dibromofluoromethane	99.0	70-130		%REC	1	4/29/2015 6:29:57 PM	R25860
Surr: Toluene-d8	98.0	70-130		%REC	1	4/29/2015 6:29:57 PM	R25860

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 20
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1504C24

Pace Project No.: 30147057

Sample: 1504C24-001H R.O. Lab ID: 30147057001 Collected: 04/28/15 08:45 Received: 05/01/15 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.75 ± 0.849 (0.976) C:NA T:60%	pCi/L	05/13/15 10:06	13982-63-3	
Radium-228	EPA 904.0	0.398 ± 0.412 (0.851) C:72% T:77%	pCi/L	05/11/15 17:31	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1504C24

Pace Project No.: 30147057

QC Batch: RADC/24384

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 30147057001

METHOD BLANK: 890250

Matrix: Water

Associated Lab Samples: 30147057001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.437 ± 0.426 (0.869) C:70% T:70%	pCi/L	05/11/15 17:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1504C24
Pace Project No.: 30147057

QC Batch:	RADC/24322	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	30147057001		

METHOD BLANK:	888781	Matrix:	Water
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Associated Lab Samples: 30147057001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.256 ± 0.438 (0.767) C:NA T:98%	pCi/L	05/13/15 09:55	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R25851			RunNo: 25851				
Prep Date:			Analysis Date: 4/29/2015			SeqNo: 766029		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R25851			RunNo: 25851				
Prep Date:			Analysis Date: 4/29/2015			SeqNo: 766030		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.51	0.020	0.5000	0	103	85	115			
Barium	0.47	0.0020	0.5000	0	93.0	85	115			
Boron	0.49	0.040	0.5000	0	97.9	85	115			
Chromium	0.48	0.0060	0.5000	0	95.5	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Copper	0.47	0.0060	0.5000	0	94.3	85	115			
Iron	0.47	0.020	0.5000	0	94.6	85	115			
Manganese	0.44	0.0020	0.5000	0	88.9	85	115			
Nickel	0.48	0.010	0.5000	0	96.6	85	115			
Zinc	0.48	0.010	0.5000	0	95.6	85	115			

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R25881			RunNo: 25881				
Prep Date:			Analysis Date: 4/30/2015			SeqNo: 767040		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Molybdenum	ND	0.0080								
Silver	ND	0.0050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R25881			RunNo: 25881				
Prep Date:			Analysis Date: 4/30/2015			SeqNo: 767041		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Molybdenum	0.49	0.0080	0.5000	0	97.4	85	115			
Silver	0.088	0.0050	0.1000	0	87.9	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R25950		RunNo: 25950					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 769414		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	96.4	85	115			
Selenium	0.024	0.0010	0.02500	0	94.9	85	115			
Uranium	0.025	0.0010	0.02500	0	98.7	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R25950			RunNo: 25950					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 769415		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26042		RunNo: 26042					
Prep Date:			Analysis Date: 5/7/2015		SeqNo: 772040		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26042			RunNo: 26042					
Prep Date:		Analysis Date: 5/7/2015			SeqNo: 772041		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.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18982	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	18982	RunNo:	25930					
Prep Date:	4/30/2015	Analysis Date:	5/4/2015	SeqNo:	768647	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-18982	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	18982	RunNo:	25930					
Prep Date:	4/30/2015	Analysis Date:	5/4/2015	SeqNo:	768648	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R25872			RunNo: 25872					
Prep Date:		Analysis Date: 4/29/2015			SeqNo: 766806		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								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R25872			RunNo: 25872					
Prep Date:		Analysis Date: 4/29/2015			SeqNo: 766807		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.46	0.10	0.5000	0	92.4	90	110			
Chloride	4.5	0.50	5.000	0	91.0	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.2	90	110			

Sample ID	1504C24-001EMS		SampType: MS		TestCode: EPA Method 300.0: Anions					
Client ID:	R.O.		Batch ID: R25872		RunNo: 25872					
Prep Date:			Analysis Date: 4/29/2015		SeqNo: 766822		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.5	0.10	0.5000	2.238	55.2	66.1	113			S
Nitrogen, Nitrate (As N)	3.3	0.10	2.500	1.147	86.1	84	109			

Sample ID	1504C24-001EMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	R.O.		Batch ID: R25872		RunNo: 25872					
Prep Date:			Analysis Date: 4/29/2015		SeqNo: 766823		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.4	0.10	0.5000	2.238	30.4	66.1	113	5.06	20	S
Nitrogen, Nitrate (As N)	3.3	0.10	2.500	1.147	86.6	84	109	0.363	20	

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R25994			RunNo: 25994					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770620		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R25994		RunNo: 25994					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 770621		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.7	0.50	10.00	0	97.2	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18974		SampType:	MBLK		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	PBW		Batch ID:	18974		RunNo:	25898				
Prep Date:	4/30/2015		Analysis Date:	4/30/2015		SeqNo:	767691		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	ND	0.010									

Sample ID	LCS-18974		SampType:	LCS		TestCode:	EPA Method 8011/504.1: EDB				
Client ID:	LCSW		Batch ID:	18974		RunNo:	25898				
Prep Date:	4/30/2015		Analysis Date:	4/30/2015		SeqNo:	767692		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	70	130				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18947		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 18947		RunNo: 25835					
Prep Date:	4/29/2015		Analysis Date: 4/29/2015		SeqNo: 766304		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		109	76.5	150			

Sample ID	LCS-18947		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18947		RunNo: 25835					
Prep Date:	4/29/2015		Analysis Date: 4/29/2015		SeqNo: 766305		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	0.57		0.5000		115	76.5	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18997		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 18997		RunNo: 25944					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769049		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	2.2		2.500		87.2	44.5	110			
Surr: Tetrachloro-m-xylene	2.4		2.500		97.6	31.8	95.7			S

Sample ID	LCS-18997		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 18997		RunNo: 25944					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769942		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.9	1.0	5.000	0	98.7	22.6	127			
Aroclor 1260	5.1	1.0	5.000	0	102	20.4	122			
Surr: Decachlorobiphenyl	2.9		2.500		114	44.5	110			S
Surr: Tetrachloro-m-xylene	4.2		2.500		169	31.8	95.7			S

Sample ID	LCSD-18997		SampType: LCSD		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02		Batch ID: 18997		RunNo: 25944					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769944		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.6	1.0	5.000	0	93.0	22.6	127	6.03	26.9	
Aroclor 1260	5.3	1.0	5.000	0	107	20.4	122	4.45	29.1	
Surr: Decachlorobiphenyl	3.0		2.500		118	44.5	110	0	0	S
Surr: Tetrachloro-m-xylene	3.8		2.500		150	31.8	95.7	0	0	S

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R25860			RunNo: 25860					
Prep Date:		Analysis Date: 4/29/2015			SeqNo: 766354		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.6	70	130			
Toluene	20	1.0	20.00	0	98.9	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	108	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	98.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R25860			RunNo: 25860					
Prep Date:		Analysis Date: 4/29/2015			SeqNo: 766361		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.9		10.00		99.2	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18998		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	18998		RunNo:	25938			
Prep Date:	5/1/2015		Analysis Date:	5/5/2015		SeqNo:	769391	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	14		20.00		71.8	30.8	125			

Sample ID	LCS-18998		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	18998		RunNo:	25938			
Prep Date:	5/1/2015		Analysis Date:	5/5/2015		SeqNo:	769392	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	55	2.0	80.00	0	69.3	41	76.8			
1-Methylnaphthalene	57	2.0	80.20	0	71.0	24.7	81			
2-Methylnaphthalene	56	2.0	80.00	0	70.4	17.4	81.9			
Acenaphthylene	60	2.5	80.20	0	75.4	50.3	77.5			
Acenaphthene	57	2.0	80.00	0	71.8	27.7	81.1			
Fluorene	5.8	0.80	8.020	0	72.8	34.2	75.1			
Phenanthrene	2.9	0.60	4.020	0	72.4	44.6	88.3			
Anthracene	2.9	0.60	4.020	0	72.1	41.9	85.3			
Fluoranthene	6.1	0.30	8.020	0	76.2	40.6	88			
Pyrene	6.6	0.30	8.020	0	82.8	41	86.6			
Benz(a)anthracene	0.62	0.070	0.8020	0	77.3	43.8	86.7			
Chrysene	3.1	0.20	4.020	0	76.9	44.5	80.7			
Benzo(b)fluoranthene	0.81	0.10	1.002	0	80.8	44.3	87.1			
Benzo(k)fluoranthene	0.39	0.070	0.5000	0	78.0	39.9	94.3			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS-18998		SampType: LCS			TestCode: EPA Method 8310: PAHs				
Client ID:	LCSW		Batch ID: 18998			RunNo: 25938				
Prep Date:	5/1/2015		Analysis Date: 5/5/2015			SeqNo: 769392		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.39	0.070	0.5020	0	77.7	44	86.5			
Dibenz(a,h)anthracene	0.78	0.12	1.002	0	77.8	48.8	83.6			
Benzo(g,h,i)perylene	0.83	0.12	1.000	0	83.0	43.6	84.5			
Indeno(1,2,3-cd)pyrene	1.6	0.25	2.004	0	77.3	49.2	91.1			
Surr: Benzo(e)pyrene	21		20.00		106	30.8	125			

Sample ID	LCSD-18998		SampType: LCSD			TestCode: EPA Method 8310: PAHs				
Client ID:	LCSS02		Batch ID: 18998			RunNo: 25938				
Prep Date:	5/1/2015		Analysis Date: 5/5/2015			SeqNo: 769393		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	58	2.0	80.00	0	72.7	41	76.8	4.75	20	
1-Methylnaphthalene	60	2.0	80.20	0	74.4	24.7	81	4.68	20	
2-Methylnaphthalene	59	2.0	80.00	0	73.8	17.4	81.9	4.70	20	
Acenaphthylene	63	2.5	80.20	0	78.7	50.3	77.5	4.29	20	S
Acenaphthene	60	2.0	80.00	0	74.9	27.7	81.1	4.26	20	
Fluorene	6.1	0.80	8.020	0	75.7	34.2	75.1	3.86	20	S
Phenanthrene	3.1	0.60	4.020	0	76.1	44.6	88.3	5.03	24	
Anthracene	3.0	0.60	4.020	0	75.9	41.9	85.3	5.04	20	
Fluoranthene	6.4	0.30	8.020	0	79.9	40.6	88	4.79	20.9	
Pyrene	7.0	0.30	8.020	0	86.8	41	86.6	4.71	20.8	S
Benz(a)anthracene	0.65	0.070	0.8020	0	81.0	43.8	86.7	4.72	20	
Chrysene	3.3	0.20	4.020	0	80.8	44.5	80.7	5.05	20	S
Benzo(b)fluoranthene	0.84	0.10	1.002	0	83.8	44.3	87.1	3.64	20.6	
Benzo(k)fluoranthene	0.41	0.070	0.5000	0	82.0	39.9	94.3	5.00	20.8	
Benzo(a)pyrene	0.41	0.070	0.5020	0	81.7	44	86.5	5.00	20	
Dibenz(a,h)anthracene	0.83	0.12	1.002	0	82.8	48.8	83.6	6.21	20	
Benzo(g,h,i)perylene	0.87	0.12	1.000	0	87.0	43.6	84.5	4.71	20	S
Indeno(1,2,3-cd)pyrene	1.6	0.25	2.004	0	81.3	49.2	91.1	5.03	20	
Surr: Benzo(e)pyrene	22		20.00		112	30.8	125	0		

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18972	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	18972	RunNo:	25901					
Prep Date:	4/30/2015	Analysis Date:	4/30/2015	SeqNo:	767792	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-18972	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	18972	RunNo:	25901					
Prep Date:	4/30/2015	Analysis Date:	4/30/2015	SeqNo:	767793	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	109	75.7	126			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R26153		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26153		RunNo:	26153				
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	775896	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26153		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R26153		RunNo: 26153					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 775897		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.500		0.5000	0	100	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C24

13-May-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-18979		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 18979		RunNo: 25912					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 768004		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-18979		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 18979		RunNo: 25912					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 768005		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	999	20.0	1000	0	99.9	80	120			

Qualifiers:

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

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH 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: NAVAJO REFINING CO

Work Order Number: 1504C24

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/29/2015 9:15:00 AM

Completed By: Lindsay Mangin

4/29/2015 10:14:50 AM

Reviewed By:

Chain of Custody

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

5/1
(<2 or ≥ 12 unless noted)

Adjusted?

N/A

Checked by:

CS

CS 04/29/15 Sample -002A
No VOA Vials (2 of 2) has a bubble

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

Client: Navajo Refining Co.

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation:

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Monthly RO Reject

Project #: P.O. # 167796

Project Manager:

Scott Denton / Robert Combs

Sampler: Elizabeth Salisbury

On Ice: ☒ Yes ☐ No

Sample Temperature: 100 C

Date Time Matrix Sample Request ID

4/28/15 8:45AM

Aq

R.O.

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

4/28/15 8:45AM

Trip Blank

CS 04/28/15

Date: 4/28/15

Time: 10:45 AM

Date: Time

Relinquished by: Elizabeth Salisbury

Relinquished by: Elizabeth Salisbury

Relinquished by:

Received by:

Received by:

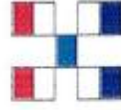
Date Time

Date Time

Date Time

Remarks: Send results to Scott Denton, Mike Holder, Micki Schultz, Robert Combs and Andrew Contreras.

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.



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

See Attachment

FOURTH QUARTER 2014

[illegible][illegible]



June 15, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

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

RE: WQA-OCD-CO-2015-002
Monthly Report – May 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, Paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's June 2015 monthly report under the Order.

Specifically, this report covers the May 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2, Paragraph 3, and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Results of the monthly discharge sample results.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 and 2.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Navajo Refining Company, L.L.C.
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Monthly Discharge Sample Results

In accordance with Exhibit A, Paragraph 3 of the Order, Navajo collected a sample of the RO reject fluid discharge from the temporary RO unit on April 28, 2015, within 5 business days of the date of the Order (April 27, 2015). Navajo also collected a sample from the permanent RO units (combined discharge) on that same day. The analytical lab report for these samples was provided previously to OCD on May 15, 2015. It should be noted that, beginning with the July 2015 monthly report for the period of June 2015, and as required by Exhibit A Paragraph 3, Navajo's reports will reflect that a sample is collected on or around the first business day of the month, beginning with June 1, 2015.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request to OCD on May 22, 2015, within 30 days of the date of the Order. Paragraph III.2.b.i.1 of the Order governs the calculation of stipulated penalties for exceedances of GW-028's daily RO reject fluid discharge volume limit prior to submittal of the discharge permit modification application. Paragraph III.2.b.i.2 of the Order governs the calculation of stipulated penalties for exceedances of this limit after Navajo submits the discharge permit modification application (and prior to OCD's approval or denial of the application). Therefore, for the May 1 through 21 timeframe, Paragraph III.2.b.i.1 is applicable, and from May 22 onward, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day prior to and following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$1,000 per day for each daily RO reject fluid discharge volume exceeding 10,000 barrels from May 1 to May 21.
- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from May 22 to May 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from May 22 to May 31.

Navajo has calculated a penalty of \$22,000 for May 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 31 days in May. Calculations conducted in accordance with Paragraph III.2.b.i.1 and 2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit.

Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo is conducting a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields, from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average.

Navajo is also seeking OCD authorization of a new non-hazardous waste injection well for use in disposal of Refinery fluids, including RO reject water. OCD notified Navajo that the application for a Discharge Permit for the new injection well (WDW-4) is administratively complete by letter dated April 23, 2015. Accordingly, Navajo has completed its part of the public notice process as required by 20.6.2.3108B New Mexico Administrative Code (NMAC) and has provided the necessary documentation of the public notice completion to the OCD by submittal dated June 4, 2015.

Navajo has completed the application for the OCD Class II Order also required for the new WDW-4 injection well. Public notices of submittal of the application for the Class II Order were mailed by Navajo to persons within ½ mile of the proposed location pursuant to OCD regulations. Submittal of an amended application for authorization to inject, including the C-108 form with a revised affirmation, the affidavit of publication of the public notice, and proof of mailing of the notice and application to persons within ½ mile of the proposed location were submitted to OCD on May 21, 2015.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

- Attachment 1: Daily Discharge Flow Rates
- Attachment 2: Stipulated Penalty Calculation

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
5/1/2015	117	105	222	7611	146	5001	12612
5/2/2015	121	106	227	7783	149	5104	12887
5/3/2015	117	104	221	7577	151	5171	12748
5/4/2015	122	107	229	7851	151	5182	13033
5/5/2015	121	100	221	7577	154	5270	12847
5/6/2015	120	97	217	7440	152	5212	12652
5/7/2015	121	100	221	7577	154	5267	12844
5/8/2015	132	109	241	8263	155	5322	13585
5/9/2015	133	103	236	8091	154	5280	13371
5/10/2015	131	104	235	8057	155	5314	13371
5/11/2015	131	106	237	8126	157	5417	13543
5/12/2015	132	107	239	8194	156	5349	13543
5/13/2015	131	103	234	8023	156	5361	13384
5/14/2015	133	111	244	8366	142	4854	13220
5/15/2015	139	111	250	8571	136	4669	13240
5/16/2015	134	105	239	8194	62	2117	10311
5/17/2015	136	111	247	8469	62	2115	10584
5/18/2015	135	111	246	8434	62	2130	10564
5/19/2015	134	112	246	8434	64	2187	10621
5/20/2015	136	105	241	8263	64	2194	10457
5/21/2015	136	110	246	8434	66	2270	10704
5/22/2015	135	112	247	8469	68	2331	10800
5/23/2015	138	114	252	8640	71	2448	11088
5/24/2015	133	106	239	8194	80	2739	10933
5/25/2015	135	102	237	8126	81	2765	10891
5/26/2015	131	111	242	8297	73	2501	10798
5/27/2015	138	108	246	8434	60	2054	10488
5/28/2015	131	100	231	7920	68	2330	10250
5/29/2015	130	99	229	7851	63	2160	10011
5/30/2015	132	110	242	8297	63	2160	10457
5/31/2015	140	107	247	8469	61	2084	10553

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - May 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
	- Prior to Navajo submitting a discharge permit modification application	\$1,000	21	\$21,000
	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	10	\$1,000
	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$22,000

Chavez, Carl J, EMNRD

From: Holder, Mike <Michael.Holder@hollyfrontier.com>
Sent: Tuesday, May 12, 2015 7:11 AM
To: Brancard, Bill, EMNRD; Marks, Allison, EMNRD; Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Cc: McWatters, Denise; Denton, Scott; Holder, Mike
Subject: ACO Penalty Payment
Attachments: 150511 Subm' RO Reject ACO - Civil Penalty Payment.pdf

Bill/Allison/Jim/Carl – the attached penalty payment was sent out via certified mail yesterday. We appreciate your working with us on this issue and please don't hesitate to let us know if any questions.

Thanks,
Mike

Mike Holder
Corporate Environmental Specialist – Water & Waste
HollyFrontier
2828 North Harwood, Suite 1300
Dallas, TX 75201
(214) 954-6536 (office)
(575) 308-1115 (cell)

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May 11, 2015

Director, Oil Conservation Division
NM Energy, Minerals & Natural Resources Dept.
1220 S. St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt
7014 3490 0000 6858 9075

Re: WQA-OCD-CO-2015-002
NRC Agreed Compliance Order – RO Reject
April 2015 ACO – Civil Penalty Payment
Navajo Refining Company, L.L.C.
Artesia Refinery

Dear Director:

Enclosed please find a check in the amount of \$381,000 in payment of civil penalties pursuant to Section III.2.a. of the above Agreed Compliance Order (ACO). If you have any questions, please do not hesitate to contact me at (575) 746-5487.

Sincerely,

Scott M. Denton
Environmental Manager

Enclosure

Electronic cc: OCD: Bill Brancard, Allison Marks, Jim Griswold, Carl Chavez
HFC Bob O'Brien, Mike Holder, Denise McWatters

Environmental File: OCD.RO Reject Flow Data.Order
150511 RO Reject ACO – Civil Penalty Payment

Navajo Refining Company, L.L.C.
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

STATE OF NEW MEXICO GENERAL FUND
DIRECTOR OIL CONSERVATION DIVISION
NM ENERGY MINERALS & NATURAL RESOUR
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Check Date 05/06/2015
Check Amount \$ 381,000.00
Vendor No 5126527
Payment Document 2000057196
Company Code 1020

Invoice Date	Invoice Number	Description	Invoice Amount	Discount Amount	Net Amount
05/05/2015	050515	PENALTY FOR RO DISCHARGE EXCEEDANCE	381,000.00	0.00	381,000.00

Payment document	Check number	Date	Currency	Payment amount
2000057196	---	05/06/2015	USD	*****381,000.00*

↓ PLEASE FOLD ON PERFORATION AND DETACH HERE ↓

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM

NAVAJO REFINING COMPANY, L.L.C.
2828 N. Harwood St., Suite 1300
Dallas TX 75201-1507

64-1278/611

05/06/2015

PAY EXACTLY

*****381,000.00*USD

VOID AFTER 180 DAYS

PAY *** THREE HUNDRED EIGHTY-ONE THOUSAND and 00 /100 USD***

TO THE
ORDER OF STATE OF NEW MEXICO GENERAL FU
DIRECTOR OIL CONSERVATION DIVI
NM ENERGY MINERALS & NATURAL R
1220 S ST FRANCIS DR
SANTA FE NM 87505-4225

Bank of America N.A.


AUTHORIZED SIGNATURE

Chavez, Carl J, EMNRD

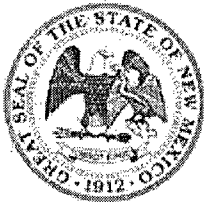
From: VonGonten, Glenn, EMNRD
Sent: Tuesday, April 06, 2010 4:13 PM
To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Chavez, Carl J, EMNRD
Cc: Altomare, Mikal, EMNRD; Macquesten, Gail, EMNRD
Subject: FW: Environment Department Reaches \$346,452 Settlement with Navajo Refining Co. over Hazardous Waste Violations

From: von Gonten, Susan, NMENV
Sent: Tuesday, April 06, 2010 2:20 PM
To: VonGonten, Glenn, EMNRD
Subject: FW: Environment Department Reaches \$346,452 Settlement with Navajo Refining Co. over Hazardous Waste Violations

fyi

Susan von Gonten
Geologist/Remedial Action Program
NMED/Petroleum Storage Tank Bureau
1301 Siler Road, Building B
Santa Fe, NM 87507
Voice: (505) 476-4389
Facsimile: (505) 476-4374
<http://www.nmenv.state.nm.us/ust/ustbtop.html>

From: Bardino, Marissa, NMENV
Sent: Tuesday, April 06, 2010 1:58 PM
Subject: Environment Department Reaches \$346,452 Settlement with Navajo Refining Co. over Hazardous Waste Violations



BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT
Office of the Secretary

Harold Runnels Building
1190 Saint Francis Drive (87505)
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2855 Fax (505) 827-2836
www.nmenv.state.nm.us



RON CURRY
Secretary
SARAH COTTRELL
Deputy Secretary

For Immediate Release
April 5, 2009

Contact: Marissa Stone Bardino, NMED Communications Director
Phone: (505) 827-0314

Environment Department Reaches \$346,452 Settlement with Navajo Refining Co. over Hazardous Waste Violations

(Santa Fe, NM) – The New Mexico Environment Department reached a settlement with Navajo Refining Co., LLC. with a penalty of \$346,452 over hazardous waste violations at the petroleum refinery in Artesia.

The company in years past violated state regulations by failing to store hazardous waste in a structurally sound container and improperly managing waste in other containers.

“We fought to include a provision in the settlement that allows citizens to hold the company accountable to the terms of this agreement,” said New Mexico Environment Department Secretary Ron Curry. “Navajo's willingness to come to a resolution is commendable.”

Navajo's other violations include failing to post warning signs on a fence around the North Colony Landfarm, neglecting to train employees in the proper management of hazardous waste, building a tank on the landfarm causing a disturbance to the area, failure to install a final cover on the landfarm and other violations. The landfarm, which is an approximately 4.25-acre land treatment unit, received hazardous wastes between 1980 and 1990.

The settlement requires the company to install a vegetative cover over the landfarm to absorb water and prevent it from seeping into the former landfill. The agreement also prevents the company from storing hazardous waste in certain tanks.

The Navajo facility, which has a capacity of approximately 100,000 barrels of crude oil a day, refines sour crude oil into gasoline, diesel fuel, and jet fuel. The refinery's storage tanks have a capacity of about 2 million barrels. Navajo's operations generate a variety of hazardous wastes, including ignitable wastes, various toxic metal-bearing wastes, slop oil emulsion solids, heat exchanger bundle cleaning sludge, spent hydrotreating catalyst, universal waste lamps and other waste. Navajo is not permitted to treat, store (for more than 90 days), or dispose of any hazardous wastes at the site. However, the company stores hazardous waste at several locations at its property for less than 90 days.

For more information, call Marissa Stone Bardino at (505) 827-0314.

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NEWS-SUN STAFF REPORT

The New Mexico Environment Department reached a settlement with Navajo Refining Co. LLC with a penalty of \$346,452 over hazardous waste violations at the petroleum refinery in Artesia. The company in years past violated state regulations by failing to store hazardous waste in a structurally sound container and improperly managing waste in other containers, according to the N.M. Environment Department. "We fought to include a provision in the settlement that allows citizens to hold the company accountable to the terms of this agreement," Department Secretary Ron Curry said in a release. "Navajo's willingness to come to a resolution is commendable." Navajo's other violations include failing to post warning signs on a fence around the North Colony Landfarm, neglecting to train employees in the proper management of hazardous waste, building a tank on the landfarm causing a disturbance to the area, failure to install a final cover on the landfarm and other violations. The landfarm, which is an approximately 4.25-acre land treatment unit, received hazardous wastes between 1980 and 1990.

The Navajo facility, which has a capacity of about 100,000 barrels of crude oil a day, refines sour crude oil into gasoline, diesel fuel and jet fuel. Navajo is not permitted to treat, store (for more than 90 days) or dispose of any hazardous wastes at the site. Navajo environmental manager Johnny Lackey said the company did not have a comment at this time.



Company Hopes To Eventually Employ 3,000 in N.M.

Thursday, April 08, 2010

By Rosalie Rayburn

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Journal Staff Writer

Rio Rancho has landed a massive renewable energy manufacturing plant slated to bring 1,500 high-paying jobs by 2014, with more plants possible elsewhere in the state down the line.

Mayor Thomas Swisstack announced Wednesday that the startup company Green2V Green Energy Solutions plans to build its first plant and headquarters in Rio Rancho.

Officials told a festive crowd of more than 200 people that the company intends to invest \$1 billion in the state over the next several years, beginning with the 1-million-square-foot solar component manufacturing and research complex in northern Rio Rancho.

Recent setbacks by other solar energy companies with big plans for New Mexico, including the cancellation of Signet Solar's plant in Belen just last week, did nothing to dampen the enthusiasm of the state, local and business leaders who crowded into the City Council chambers to hear the announcement.

"The message going out to America is that New Mexico is the clean energy state and we are going to be the Solar Valley, like Silicon Valley, for solar energy," Gov. Bill Richardson told the crowd.

Sen. Jeff Bingaman, who recently returned from a trip to China, which has numerous solar manufacturing plants, said this venture will help keep the U.S. competitive.

"There's no reason why we in New Mexico who can most benefit from photovoltaic energy and solar energy need to be buying the technology to do that from other parts of the world," Bingaman said.

Green2V was founded about two years ago by eight former business executives. Its CEO, Bill Sheppard, is a former Intel technology and manufacturing vice president who spent time at the Rio Rancho plant in the 1990s.

"We've studied the green energy economy and have recognized a great opportunity," Sheppard said.

He compared the opportunities in solar energy to the development of microprocessors in the early 1990s. Based on experience in silicon manufacturing processes, he said his company will manage every aspect of solar generating installation, from producing the wafers for solar cells to the financing of generating projects.

"We're sand-to-kilowatts," Sheppard said. "We're different because we manage the entire supply chain."

He said that by the end of 2014, the Rio Rancho facility will have 1,500 employees with an annual payroll of \$64 million. Once its first site is established, Green2V has plans to expand to additional areas in New Mexico, creating up to 3,000 jobs statewide.

"This is another historic day in this city's young history," Swisstack said.

Richardson said Green2V will be eligible for state incentives such as the high wage tax and manufacturing investment tax credits and job training funds.

Locally, Rio Rancho city councilors will consider a resolution next week for \$500 million in industrial revenue bonds that will enable construction of the plant to begin this summer.

The complex will be built on a 124-acre site on the north side of Paseo del Volcan, immediately west of V. Sue Cleveland High School. The city will buy the land from the State Land Office for about \$6.9 million and lease it back to the client.

If the bonds move ahead, construction is scheduled to start this summer, Swisstack said.

Green2V has an agreement with Los Angeles-based private investor GP3 Ltd. to buy the industrial revenue bonds issued by Rio Rancho.

Noreen Scott, president of Rio Rancho Economic Development Corp., which helped recruit Green2V to Rio Rancho, said GP3 is a private philanthropic trust focused on alternative energy.

She said GP3 is working through BBVA Compass bank locally to provide the financing.

Sheppard said the company has private equity investors but did not give details.

There have been several announcements in recent years of solar companies, many of them receiving state and local incentives, that promised to bring large numbers of jobs to New Mexico. The results have been mixed.

- Solar panel manufacturer Advent Solar received \$17 million in state investment money and was expected to employ 1,000 by this year. Instead, it has cut its work force to a few dozen.

- Signet Solar received \$38 million in tax incentives toward a plant it was supposed to build in Belen, creating 600 jobs. Signet canceled the plan after a federal Energy Department loan guarantee fell through.

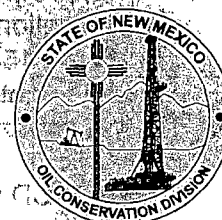
New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson

Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



July 16, 2008

Mr. James Resinger
Vice President, Refining
Navajo Refining Company, LLC
P.O. Box 159
Artesia, NM 88211-0159

Re: Renewal of Discharge Permit GW-014 for the Lovington Refinery
Renewal of Discharge Permit GW-028 for the Artesia Refinery
Letter from Mr. James Resinger to Mr. Wayne Price dated May 20, 2008

Dear Mr. Resinger,

Mr. Wayne Price of the Oil Conservation Division's Environmental Bureau asked me to respond to the questions raised by Navajo Refining Company LLC (Navajo) regarding the extent of the Oil Conservation Division's authority. I understand that these questions arose during Navajo's meetings and correspondence with the Oil Conservation Division (OCD) concerning the renewal of Navajo's discharge permits GW-014 for the Lovington Refinery and GW-028 for the Artesia Refinery.

In particular, Mr. Price has provided me with a copy of your letter of May 20, 2008, which questioned the OCD's authority to require the installation of liners under tanks and throughout bermed areas at Navajo's Lovington and Artesia Refineries, and to complete the retrofit of tanks as part of the renewal of the discharge permits for those refineries. In your letter, you cite *Phelps Dodge Tyrone, Inc. v. New Mexico Water Quality Control Commission*, 2006-NMCA-115, 140 N.M. 464, 470, 143 P.3d 502, 509 for the proposition that any conditions attached to a discharge permit must be reasonable. The OCD believes that its proposed conditions are reasonable due to the proximity of the refineries to population centers, the depth to ground water, and the type and volumes of chemicals of concern. The Water Quality Act gives the OCD broad power to prevent and abate water pollution. See NMSA 1978, Section 74-6-4, 20.6.2 NMAC (Ground and Surface Water Protection) and 21.6.4 NMAC (Standards for Interstate and Intrastate Surface Waters). The fact that there is ground water contamination at both the Lovington and Artesia Refineries illustrates the need to exercise that power to prevent further pollution and abate existing pollution.

I understand that Navajo also contests the OCD's position, as set out in Condition 17iii of the Artesia Refinery Discharge permit, that fires are "Major Releases" that must be reported to the OCD under 19.15.3.116 NMAC. The OCD's statutory powers extend to refineries. See, for example, NMSA 1978, Section 70-2-12(A), (B)(8) and (B)(22). The OCD is specifically charged

Oil Conservation Division * 1220 South St. Francis Drive
* Santa Fe, New Mexico 87505

* Phone: (505) 476-3440 * Fax (505) 476-3462 * <http://www.emnrd.state.nm.us>



July 16, 2008

Page 2

with preventing fires. See NMSA 1978, Section 70-2-12(B)(5). OCD's notice rule requires notification of any unauthorized release occurring during the servicing or processing of crude oil. See 19.15.3.116.A(1) NMAC. "Major Releases" require both immediate verbal notice and timely written notice. 19.15.3.116.B(1) NMAC. And the rule defines "Major Release" to include an unauthorized release of any volume which results in a fire. 19.15.3.116.B(1)(b)(i) NMAC.

The OCD would like to thank Navajo for communicating with the OCD about its authority. We look forward to working together in good faith to protect public health, fresh water and the environment. Please contact me if you have additional questions.

Sincerely,

Gail MacQuesten
OCD Attorney

Cc: Wayne Price, **OCD Environmental Bureau**
GW-014
GW-028