GW – 028

Annual DP Report (Part 12 of 16)

2015

WO#:	1511135
	25-Nov-15

Client: Navajo Refining Company **Project:** Monthly RO Reject

Sample ID 100ng Ics3	SampT	ype: LC	S	TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch	1D: R3	0086	R						
Prep Date:	Analysis D	ate: 11	/6/2015	S	SeqNo: 916525					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
lenzene	22	1.0	20.00	0	111	70	130			
oluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
,1-Dichloroethene	22	1.0	20.00	0	109	70	130			
richloroethene (TCE)	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.7	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			
Sample ID rb3	SampT	ype: ME	BLK	Test	Code: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch ID: R30086			R	unNo: 3	0086				
Prep Date:	Analysis D	ate: 11	/6/2015	S	eqNo: 9	16527	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
enzene	ND	1.0								
oluene	ND	1.0								
thylbenzene	ND	1.0								
lethyl tert-butyl ether (MTBE)	ND	1.0								
2,4-Trimethylbenzene	ND	1.0								
,3,5-Trimethylbenzene	ND	1.0								
,2-Dichloroethane (EDC)	ND	1.0								
,2-Dibromoethane (EDB)	ND	1.0								
aphthalene	ND	2.0								
Methylnaphthalene	ND	4.0								
Methylnaphthalene	ND	4.0								
cetone	ND	10								
romobenzene	ND	1.0								
romodichloromethane	ND	1.0								
romoform	ND	1.0								
romomethane	ND	3.0								
Butanone	ND	10								
arbon disulfide	ND	10								
arbon Tetrachloride	ND	1.0								
hlorobenzene	ND	1.0								
hloroethane	ND	2.0								
hloroform	ND	1.0								
hloromethane	ND	3.0								
		0.0								

Qualifiers:

Value exceeds Maximum Contaminant Level. *

D Sample Diluted Due to Matrix

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

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WO#:	1511135
	25-Nov-15

and the second	o Refining Co		1							
Project: Month	nly RO Reject									
Sample ID rb3	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batc	D: R	30086	F	RunNo: 3	0086				
Prep Date:	Analysis D	Date: 1	1/6/2015	:	SeqNo: 9	16527	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

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and the second	Refining Co y RO Reject									
Sample ID rb3	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW		D: R3		F	RunNo: 3	0086				
Prep Date:	Analysis D				eqNo: 9		Units: µg/L			
20 VC 01										
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			
Sample ID 1511135-001am	s SampT	ype: MS	6	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: R.O. Reject	Batch	D: R3	0086	F	RunNo: 3	0086				
Prep Date:	Analysis D	ate: 11	1/6/2015	S	SeqNo: 9	16530	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	20	1.0	20.00	0	99.3	70	130			
Chlorobenzene	23	1.0	20.00	0	114	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.5	70	130			
Surr: Dibromofluoromethane	10		10.00		99.9	70	130			
Surr: Toluene-d8	8.9		10.00		89.4	70	130			
Sample ID 1511135-001am	sd SampT	ype: MS	SD.	Tes	tCode: FI	PA Method	8260B: VOL			
Client ID: R.O. Reject		D: R3			RunNo: 3					
Prep Date:	Analysis D				SeqNo: 9		Units: µg/L			
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130	7.96	20	
Toluene	21	1.0	20.00	0	105	70	130	5.76	20	
Chlorobenzene	21	1.0	20.00	0	106	70	130	6.75	20	
1,1-Dichloroethene	20	1.0	20.00	0	100	70	130	11.1	20	
Trichloroethene (TCE)	20	1.0	20.00	0	99.6	70	130	8.76	20	
Surr: 1,2-Dichloroethane-d4	9.4	1.0	10.00	0	94.5	70	130	0.70	20	
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		101	70	130	0	0	
	10		10.00		101	70	130	0	0	

Qualifiers:

Surr: Toluene-d8

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- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

11

10.00

- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

70

130

E Value above quantitation range

105

- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

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25-Nov-15

	o Refining Co Ily RO Reject										
Sample ID MB-22195	Samp	ype: ME	BLK	Tes	tCode: El	PA Method	8310: PAHs				
Client ID: PBW	Batc	h ID: 22	195	F	RunNo: 3	0048					
Prep Date: 11/5/2015	te: 11/5/2015 Analysis Date: 11/6/2015					16008	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	1.0002-10013	20.00		74.1	37.2	136				
Sample ID LCS-22195	Samp	SampType: LCS TestCode: EPA Method 8310: PAHs									
Client ID: LCSW	Batc	h ID: 22	195	R	unNo: 3	0048					

Client ID: LCSW	Batch ID: 22195			R	RunNo: 30048					
Prep Date: 11/5/2015	Analysis Date: 11/6/2015			SeqNo: 916020			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	61	2.0	80.00	0	76.4	57.8	83.9			
1-Methylnaphthalene	64	2.0	80.20	0	80.0	43.5	88.5			
2-Methylnaphthalene	62	2.0	80.00	0	76.9	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		67.6	37.2	136			

Qualifiers:

Client: Project:

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- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
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- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

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WO#: 1511135 25-Nov-15

Client: Project:		Refining Company y RO Reject					
	BW	SampType: MBLK Batch ID: 22262	TestCode: Total Phenol RunNo: 30113		9067		
Analyte	11/10/2015	Analysis Date: 11/10/2015 Result PQL SPK value S	SeqNo: 917445 SPK Ref Val %REC LowLimit	Units: µg/L HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Re		ND 2.5					
Client ID: LC	CS-22262 CSW	SampType: LCS Batch ID: 22262	TestCode: Total Phenol RunNo: 30113	lics by SW-846 §	9067		
Prep Date: 1	11/10/2015	Analysis Date: 11/10/2015	SeqNo: 917446	Units: µg/L			

Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit Analyte Phenolics, Total Recoverable 18 2.5 20.00 0 91.2 64.4

Qualifiers:

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- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

25-Nov-15

Qual

1511135

WO#:

%RPD

135

RPDLimit

WO#:	1511135
	25-Nov-15

Client: Project:		avajo Refining Company onthly RO Reject								
Sample ID	MB-R30469	SampType: M	BLK	Tes	tCode: EPA	335.4: T	otal Cyanide	Subbed		
Client ID:	PBW	Batch ID: R	30469	F	RunNo: 304	69				
Prep Date:		Analysis Date: 1	1/16/2015	S	eqNo: 930	041	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC L	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide		ND 0.0100								
Sample ID	LCS-R30469	SampType: L	cs	Tes	tCode: EPA	335.4: T	otal Cyanide	Subbed		
Client ID:	LCSW	Batch ID: R	30469	F	RunNo: 304	69				
Prep Date:		Analysis Date: 1	1/16/2015	S	eqNo: 930	042	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC L	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide		0.508	0.5000	0	102	90	110			

Qualifiers:

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- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit

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WO#:	1511135
	25-Nov-15

Client: Project:		Refining Co V RO Reject	· ·								
Sample ID MB-	R30469	SampT	ype: MI	BLK	Tes	tCode: E	PA 903.1: F	a 226 and EP	A 904.0: I	Ra 228-Subbe	d
Client ID: PBV	v	Batc	h ID: R3	0469	F	RunNo: 3	0469				
Prep Date:		Analysis D	Date: 1	1/16/2015	S	SeqNo: 9	30044	Units: pCi/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226		ND	0.977								
Radium-226 ±		ND	0.977								
Radium-228		ND	0.693								
Radium-228 ±		ND	0.693								

Qualifiers:

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- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- - on limits
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WO#:	1511135
	25-Nov-15

	jo Refining Company hly RO Reject			
Sample ID MB-22194	SampType: MBLK	TestCode: SM2540C MC	DD: Total Dissolved Solid	ls
Client ID: PBW	Batch ID: 22194	RunNo: 30073		
Prep Date: 11/5/2015	Analysis Date: 11/7/2015	SeqNo: 916141	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-22194	SampType: LCS	TestCode: SM2540C MC	DD: Total Dissolved Solid	ls
Client ID: LCSW	Batch ID: 22194	RunNo: 30073		
Prep Date: 11/5/2015	Analysis Date: 11/7/2015	SeqNo: 916142	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:

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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

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albud TEL: 505-345-3975 J Website: www.hald	4901 Hawkins guerque, NM 87 FAX: 505-345-4	s NE 7109 Sam	ple Log-In Cl	neck List
Client Name: NAVAJO REFINING COM	Work Order Number:	1511135		RcptNo:	1
Received by/date:	11/04/15 11/4/2015 9:05:00 AM		(strandar Harley D		
Completed By: Lindsay Mangin	11/4/2015 10:47:07 AM		Amulus Allowed		
Reviewed By:	11/05/15		0 5440		
Chain of Custody					
1. Custody seals intact on sample bottles?		Yes 🛃	No 🗌	Not Present	
 Is Chain of Custody complete? How was the sample delivered? 		Yes 🛃	No 🗔	Not Present	
		<u>Courier</u>			
Log In 4. Was an attempt made to cool the samples	?	Yes 🛃	No 🗌	NA 🗌	
5. Were all samples received at a temperature	e of >0° C to 6.0°C	Yes 🖈	No 🗌		
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) prope	rly 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 brok	en?	Yes	No 🛃	# of preserved	·· · · ······ •·
12.Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🛃	No 🗆	for pH:	(>12)unless noted)
13. Are matrices correctly identified on Chain of	f Custody?	Yes 🖈	No 🗌	Adjusted?	NO
14. Is it clear what analyses were requested?		Yes 🛃	No 🗌		00
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🖈	No 🛄	Checked by:	YA
Special Handling (if applicable)					
16. Was client notified of all discrepancies with	this order?	Yes	No 🗌	NA 🗷	
Person Notified:	Date:				
By Whom:	Via:] eMail 📃 P	hone 🗌 Fax	In Person	
Regarding:					
Client Instructions:					
17. Additional remarks:			- ·		
18. <u>Cooler Information</u> Cooler No Temp °C Condition S 1 1.1 Good Yes		eal Date	Signed By		

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				Project Name:						ų			www.hallenvironmental.com				{	-
Mailing /	Address:	P.O. Box	Mailing Address: P.O. Box 159 Artesia,	Monthly R.O.	. Reject		4	901 F	4901 Hawkins NE - Albuquerque, NM 87109	s NE	dIA -	nauer	aue. N		7109			
NM 88211-0159	11-0159			Project #: P.O.). # 167796			Tel. 5(505-345-3975	-3975		ax 5(Fax 505-345-4107	5-410	22. 2			
Phone #: 575-748-3311	: 575-74	8-3311		•				.:			Anal	sis R	Analysis Request	ăt -				
email or	Fax#: 5.	email or Fax#: 575-746-5451	51	Project Manager:	ger:							(
QA/QC Package:	ackage:											822.						
X Standard	ard		Level 4 (Full Validation)	Robert Combs	S					0		-eЯ-						
□ Other				Sampter:	Elizabeth Sa	Salsberry			әр	90		+97				sbil		
	EDD (Type)_				X Yes	D No										٥S		
				Sample Temper	berature: /,/			_							ə	рәл		
Date	Timo	Matrix	Campo Domoot ID	Container	Preservative										/Nitrit	lossi		9/13
			oallipie Nequest ID	-	Type	1571135	8260E	30109	335.4:	9109 2 4 20	:2808	soibsЯ	onenlate	pinoul ⁻	Nitrate] letoT	Hd	:1.403
11/3/15		9:00 liquid	R.O. Reject	2 - 500ml P	1-unpres 1- H2SO4	100-					-		1		×	. ×	<u> </u>	
11/3/15	0 :00	9:00 liquid	R.O. Reject	3-40ml VOA HCL	HCL	-001	×											т
11/3/15	9:00	9:00 liquid	R.O. Reject	1-500ml P	HNO3	100-				×							+	1
11/3/15	9:00	9:00 liquid	R.O. Reject	1-125ml P	HNO3	100-		×										Ţ
11/3/15	00:6	9:00 liquid	R.O. Reject	1-500ml P	NaOH	100-			×	[<u> </u>					1
11/3/15	9:00	9:00 liquid	R.O. Reject	2-1L P	HNO3	100-						×		L				
11/3/15	9:00	9:00 liquid	R.O. Reject	3-40mi VOA Na2S2O3	Na2S2O3	i											\times	
11/3/15	9:00	9:00 liquid	R.O. Reject	2 - 1L Glass unpres	unpres	100-					×							1
11/3/15	9:00	9:00 liquid	R.O. Reject	1 - 1L Glass	unpres	100-	×											
11/3/15	00:6	9:00 liquid	R.O. Reject	3-40ml VOA HCI	HCI	100-				×								
11/3/15	9:00	9:00 liquid	R.O. Reject	1-250mlGlast unpres	unpres	100-				×								
11/3/15		líquid	R.O. Reject	1 - 1L Glass	H2SO4	60-							×					1
8/15		9:00 liquid	Trip Blank	₹	HCL	Chan						-				\uparrow	┝	т-
Date: II/S/I5	Time: I:OO	Relinquishe	Relinquished by: Elizabeth Sal Shiny Poi aboth Sal Arre	Received by:	Helt	111.04/15 0905	Remarks: Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg. Mo, Ni, Se, Ag, U, Zn VOCs: 11.1-Tritchbroethane: 11.2.2-Tetrachlonoethane: 11.2.2-Tetrachlonoethalene: 11.2	AI, Ba, I-Trich	B, Cd, C	tr, Co, C	I, Fe, Pt	o, Mn, Hç	J. Mo, Ni Mo, Ni	i, Se, A	g, U, Zi trachlo	n n n n n n n n n n n n n n n n n n n	ana: 1] റ
Date:	Time:	Relinquishe	d bv:	Received hv		Date Time	Trichloroethane; 1,1,2-Trichloroethylene; 1,1-Dichloroethane; 1,1-Dichloroethane; 1,2-	hane; 1	1,2-Trich	aloroethy	ene; 1,1	-Dichlor	bethane;	1,1-Di	chloroe	thene;	2	ų.
			.6.2	- An Donated Ball			Dibromoethane; 1.2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride SV/DCs: herror/shurrene above: 1 morthischerbeisheiten 2 morthischerbeitene	hane; 1, ethane; envo(a)	2-Dichlor Ethylben	oethane zene; To	Benzer uene; T	ie; Carb otal Xyle	on Tetra nes; Vin	chloride yf Chlor	ride	oform;	- 	9
	lf noraccan	adua solomos							- AICHC'		IIIcuid	apınıar	1116, Z-111	ennymia	biinigi			≌ İ

		Field To	Date-ar	Field D	11	10	9	8	7	с С	5	4	3	2		Container		Out	End	San	A.
		Field Temp. 22.1C	Date and Time:	ata (We											1.00	liner	• •	fall / Sa	Date ar	Proje Sampler nplers A	
		2.10		ather O	40ml	40ml	1-	;-1	40ml	=	500ml	125ml	500ml	40ml	500ml	Size		Outfall / Sample Location:	nd Time	ct Name IS Name Affiliation	244
		Field pH 7.85		Field Data (Weather, Observations, Etc);	VOA	VOA	Glass	Glass	VOA	Plastic	Plastic	Plastic	Plastic	VOA		Material		2	End Date and Time 11/3/2015 @ 9:10am	Project Name Biannual RO Reject Samplers Name Elizabeth Salsberry Samplers Affiliation Navajo Refining Co. LLC Start Date and Time 11/3/2015 @ 8:56am	Navajo Ref S01 E. Main Artesia, NM (Tel) 575.748 (Fax) 575.74
				1/3/2015 T	2	2	2		2	3	2			ω	2	# ul Containers		Vorth Field			Navajo Refining Company, S01 E. Main Artesia, NM 88210 (Tel) 575.748.3311 (Fax) 575.746.5451
				11/3/2015 Tmp. 57.2. Humidity 67% Wind Dir SSE Wind Speed 5.8 mph Co		×	×	×							×	(None)		North Field R.O. Reject Discarge			Company, L
				lumidity	×			;	×					×		HCL		t Discare			LIC
				67% V					>	×		×	×			HNOS		Je	Pa	Time	ג
				Vind Dir S											×	H2SO4			Parts / Sample Intervals One	Sample Type Grab Time Weighted Composite Flow Weighted Composite	Monthly RO Reject Sample Details Attachment
				SE Wind						;	×					NaOH	Preservatives	South Fie	le Intervals	Sample Type Grab Ited Composite	Monthly RO eject Samp Details Attachment
				nped 5.8												Na2S2O3	ives	South Field R.O. Reject Discarge	One		nple
							_					_				z,		ject Discar	L		
1				lifinne Cla		_	_				-	-		_	1	HSO4		0e			H
			<u>a</u>	5											00101	Other					
	Corbor	Refrigerated			Radium 226/228	8015 DRO	8082 PCBs		822/927 UINDBY			6020 Discolved Metals	6020 total metals 7470 He	8015 GRO	pH CLE S04 NO2/NO3 TDS	Analysis and/or Mathod Begulastad			Type of Sampler Directly to sample jars	Physical Property Solid Liquid Sludge	HOLLYFRONTIER The HollyFrontier Companies



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

November 25, 2015

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

OrderNo.: 1511141

RE: Monthly Temporary RO Reject

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 11/4/2015 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 <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1511141 Date Reported: 11/25/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company**Project:** Monthly Temporary RO Reject

1511141-001

Lab ID:

Client Sample ID: Temporary R.O. Reject Collection Date: 11/3/2015 9:20:00 AM Received Date: 11/4/2015 9:05:00 AM

Analyses	Result	PI	Onal	Units	DF	Date Analyzed	Batch
	Kesuit	KL	Quai	Units	Dr	•	
EPA 200.8: DISSOLVED METALS						Analys	t: JLF
Arsenic	ND	0.0050		mg/L	5	11/18/2015 12:50:57 P	
Lead	ND	0.00050		mg/L	1	11/18/2015 12:30:23 P	
Selenium	0.0098	0.0010		mg/L	1	11/18/2015 12:30:23 P	
Uranium	0.0051	0.00050		mg/L	1	11/18/2015 12:30:23 P	M B3031
EPA 903.1: RA 226 AND EPA 904.0: RA	228-SUBBE	D				Analys	t: SUB
Radium-226	1.2	0.952		pCi/L	1	11/16/2015	R3047
Radium-226 ±	0.761	0.952		pCi/L	1	11/16/2015	R3047
Radium-228	0.0442	0.929		pCi/L	1	11/16/2015	R3047
Radium-228 ±	0.403	0.929		pCi/L	1	11/16/2015	R3047
EPA METHOD 300.0: ANIONS						Analys	t: LGT
Fluoride	3.2	0.10		mg/L	1	11/4/2015 7:41:19 PM	R3001
Chloride	42	10		mg/L	20	11/4/2015 7:53:44 PM	R3001
Nitrogen, Nitrate (As N)	1.8	0.10		mg/L	1	11/4/2015 7:41:19 PM	R3001
Sulfate	1500	25		mg/L	50	11/18/2015 8:38:32 PM	1 R3034
SM2540C MOD: TOTAL DISSOLVED SC	LIDS					Analys	t: KS
Total Dissolved Solids	3050	20.0	*	mg/L	1	11/7/2015 10:19:00 AM	1 22194
EPA 335.4: TOTAL CYANIDE SUBBED						Analys	t: SUB
Cyanide	ND	0.0100		mg/L	1	11/18/2015	R3047
SM4500-H+B: PH						Analys	t: JRR
pH	7.87	1.68	н	pH units	1	11/5/2015 4:52:07 PM	R3004
EPA METHOD 200.7: DISSOLVED META	LS					Analys	t: MED
Aluminum	ND	0.020		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Barium	0.060	0.0020		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Boron	0.086	0.040		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Cadmium	ND	0.0020		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Chromium	ND	0.0060		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Cobalt	ND	0.0060		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Copper	ND	0.0060		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Iron	ND	0.020		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Manganese	ND	0.0020		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Molybdenum	ND	0.0080		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Nickel	ND	0.010		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Silver	ND	0.0050		mg/L	1	11/13/2015 4:23:54 PM	1 B3022
Zinc	0.17	0.010		mg/L	1	11/13/2015 4:23:54 PM	B3022
EPA METHOD 245.1: MERCURY						Analys	t: DBD
Mercury	ND	0.00020		mg/L	1	11/13/2015 6:17:36 PM	1 22341
Refer to the QC Summary report ar	d sample log	in checklist	t for fl	agged OC da	ita and n	reservation information	m

Matrix: AQUEOUS

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Qualifiers:

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits Page 1 of 22

P Sample pH Not In Range

RL Reporting Detection Limit

Analytical Report Lab Order 1511141 Date Reported: 11/25/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining CompanyProject: Monthly Temporary RO RejectLab ID: 1511141-001

Client Sample ID: Temporary R.O. Reject Collection Date: 11/3/2015 9:20:00 AM Received Date: 11/4/2015 9:05:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB					Analyst	: JME
1,2-Dibromoethane	ND	0.010	µg/L	1	11/6/2015 3:15:26 PM	22172
EPA METHOD 8082: PCB'S					Analyst	JDC
Aroclor 1016	ND	1.0	µg/L	1	11/6/2015 7:11:33 PM	22197
Aroclor 1221	ND	1.0	μg/L	1	11/6/2015 7:11:33 PM	22197
Aroclor 1232	ND	1.0	µg/L	1	11/6/2015 7:11:33 PM	22197
Aroclor 1242	ND	1.0	µg/L	1	11/6/2015 7:11:33 PM	22197
Aroclor 1248	ND	1.0	µg/L	1	11/6/2015 7:11:33 PM	22197
Aroclor 1254	ND	1.0	µg/L	1	11/6/2015 7:11:33 PM	22197
Aroclor 1260	ND	1.0	µg/L	1	11/6/2015 7:11:33 PM	22197
Surr: Decachlorobiphenyl	108	17.7-151	%REC	1	11/6/2015 7:11:33 PM	22197
Surr: Tetrachloro-m-xylene	85.6	20.6-151	%REC	1	11/6/2015 7:11:33 PM	22197
EPA METHOD 8015M/D: DIESEL RA	NGE				Analyst	KJH
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	11/6/2015 3:59:05 PM	22175
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	11/6/2015 3:59:05 PM	22175
Surr: DNOP	127	72-136	%REC	1	11/6/2015 3:59:05 PM	22175
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	11/5/2015 11:21:46 AM	R3003
Surr: BFB	79.3	57.8-137	%REC	1	11/5/2015 11:21:46 AM	R3003
EPA METHOD 8310: PAHS					Analyst	: JDC
Naphthalene	ND	2.0	µg/L	1	11/6/2015 6:15:12 PM	22195
1-Methylnaphthalene	ND	2.0	µg/L	1	11/6/2015 6:15:12 PM	22195
2-Methylnaphthalene	ND	2.0	µg/L	1	11/6/2015 6:15:12 PM	22195
Benzo(a)pyrene	ND	0.070	µg/L	1	11/6/2015 6:15:12 PM	22195
Surr: Benzo(e)pyrene	77.6	37.2-136	%REC	1	11/6/2015 6:15:12 PM	22195
EPA METHOD 8260B: VOLATILES					Analyst	AG
Benzene	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
Toluene	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
Ethylbenzene	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
1,2-Dichloroethane (EDC)	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
1,2-Dibromoethane (EDB)	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
Carbon Tetrachloride	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
Chloroform	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
1,1-Dichloroethane	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
1,1-Dichloroethene	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
Methylene Chloride	ND	3.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/6/2015 4:32:31 PM	R3008
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R3008

Matrix: AQUEOUS

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

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Qualifiers:

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 22
- P Sample pH Not In Range
- RL Reporting Detection Limit

Analytical Report Lab Order 1511141 Date Reported: 11/25/2015

CLIENT: Navajo Refining Company		(lient Sampl	le ID: Te	mporary R.O. Reject	
Project: Monthly Temporary RO Reject			Collection	Date: 11/	/3/2015 9:20:00 AM	
Lab ID: 1511141-001	Matrix:	AQUEOUS	Received	Date: 11/	/4/2015 9:05:00 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	11/6/2015 4:32:31 PM	R30086
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R30086
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R30086
Vinyl chloride	ND	1.0	µg/L	1	11/6/2015 4:32:31 PM	R30086
Xylenes, Total	ND	1.5	µg/L	1	11/6/2015 4:32:31 PM	R30086
Surr: 1,2-Dichloroethane-d4	92.3	70-130	%REC	1	11/6/2015 4:32:31 PM	R30086
Surr: 4-Bromofluorobenzene	95.4	70-130	%REC	1	11/6/2015 4:32:31 PM	R30086
Surr: Dibromofluoromethane	103	70-130	%REC	1	11/6/2015 4:32:31 PM	R30086
Surr: Toluene-d8	96.1	70-130	%REC	1	11/6/2015 4:32:31 PM	R30086
TOTAL PHENOLICS BY SW-846 9067					Analyst	SCC
Phenolics, Total Recoverable	ND	2.5	µg/L	1	11/10/2015	22262

Hall Environmental Analysis Laboratory, Inc.

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits

Analyte detected below quantitation limits Page 3 of 22 J

Blank

- Р Sample pH Not In Range
- RL Reporting Detection Limit
- R RPD outside accepted recovery limits

ND Not Detected at the Reporting Limit

% Recovery outside of range due to dilution or matrix S

Analytical Report Lab Order 1511141

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company **Project:** Monthly Temporary RO Reject

1511141-002

Lab ID:

Collection Date:

Client Sample ID: Trip Blank

Matrix: TRIP BLANK Received Date: 11/4/2015 9:05:00 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	11/6/2015 3:29:07 PM	22172
EPA METHOD 8260B: VOLATILES						Analyst	AG
Benzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Toluene	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
Ethylbenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Naphthalene	ND	2.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
1-Methylnaphthalene	ND	4.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
2-Methylnaphthalene	ND	4.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Acetone	ND	10		µg/L	1	11/6/2015 5:01:09 PM	R3008
Bromobenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Bromodichloromethane	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
Bromoform	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Bromomethane	ND	3.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
2-Butanone	ND	10		μg/L	1	11/6/2015 5:01:09 PM	R3008
Carbon disulfide	ND	10		μg/L	1	11/6/2015 5:01:09 PM	R3008
Carbon Tetrachloride	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Chlorobenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Chloroethane	ND	2.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Chloroform	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
Chloromethane	ND	3.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
2-Chlorotoluene	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
4-Chlorotoluene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
cis-1,2-DCE	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Dibromochloromethane	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Dibromomethane	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2-Dichlorobenzene	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
Dichlorodifluoromethane	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
1,1-Dichloroethane	ND	1.0		μg/L	1	11/6/2015 5:01:09 PM	R3008
1,1-Dichloroethene	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2-Dichloropropane	ND	1.0		µg/L	1	11/6/2015 5:01:09 PM	R3008

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

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Qualifiers:

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 22 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 11/25/2015

Analytical Report Lab Order 1511141

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/25/2015

CLIENT: Navajo Refining Company Project: Monthly Temporary RO Reject

1511141-002

Lab ID:

Collection Date:

Matrix: TRIP BLANK Received Date: 11/4/2015 9:05:00 AM

Client Sample ID: Trip Blank

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst	AG
1,3-Dichloropropane	ND	1.0	μg/L	1	11/6/2015 5:01:09 PM	R3008
2,2-Dichloropropane	ND	2.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
1,1-Dichloropropene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
Hexachlorobutadiene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
2-Hexanone	ND	10	µg/L	1	11/6/2015 5:01:09 PM	R3008
Isopropylbenzene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
4-Isopropyltoluene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
4-Methyl-2-pentanone	ND	10	µg/L	1	11/6/2015 5:01:09 PM	R3008
Methylene Chloride	ND	3.0	μg/L	1	11/6/2015 5:01:09 PM	R3008
n-Butylbenzene	ND	3.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
n-Propylbenzene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
sec-Butylbenzene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
Styrene	ND	1.0	μg/L	1	11/6/2015 5:01:09 PM	R3008
tert-Butylbenzene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
1,1,1,2-Tetrachloroethane	ND	1.0	μg/L	1	11/6/2015 5:01:09 PM	R3008
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
trans-1,2-DCE	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2,4-Trichlorobenzene	ND	1.0	μg/L	1	11/6/2015 5:01:09 PM	R3008
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
Trichlorofluoromethane	ND	1.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/6/2015 5:01:09 PM	R3008
Vinyl chloride	ND	1.0	μg/L	1	11/6/2015 5:01:09 PM	R3008
Xylenes, Total	ND	1.5	µg/L	1	11/6/2015 5:01:09 PM	R3008
Surr: 1,2-Dichloroethane-d4	101	70-130	%REC	1	11/6/2015 5:01:09 PM	R3008
Surr: 4-Bromofluorobenzene	99.2	70-130	%REC	1	11/6/2015 5:01:09 PM	R3008
Surr: Dibromofluoromethane	98.8	70-130	%REC	1	11/6/2015 5:01:09 PM	R3008
Surr: Toluene-d8	100	70-130	%REC	1	11/6/2015 5:01:09 PM	R3008

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 22
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

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Client: Project:	100 C	Refining C ly Temporar		eiect								
Sample ID		A 10	Туре: М		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID:	PBW	14 156				RunNo: 3	0225					
Prep Date:		Analysis I				SeqNo: 9		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	LLLCS-B	Samp	Type: LC	SLL	TestCode: EPA Method 200.7: Dissolved Metals							
Client ID:	BatchQC	Bato	h ID: B3	0225	F	RunNo: 3	0225					
Prep Date:		Analysis I	Date: 1	1/13/2015	S	SeqNo: 9	21064	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aluminum		ND	0.020	0.01000	0	90.0	50	150				
Barium		0.0021	0.0020	0.002000	0	105	50	150				
Boron		0.041	0.040	0.04000	0	102	50	150				
Cadmium		ND	0.0020	0.002000	0	94.0	50	150				
Chromium		0.0061	0.0060	0.006000	0	101	50	150				
Cobalt		0.0063	0.0060	0.006000	0	105	50	150				
Copper		ND	0.0060	0.006000	0	93.2	50	150				
ron		0.025	0.020	0.02000	0	127	50	150				
Manganese		0.0022	0.0020	0.002000	0	108	50	150				
Volybdenum		0.0089	0.0080	0.008000	0	112	50	150				
Vickel		ND	0.010	0.005000	0	108	50	150				
Silver		0.0053	0.0050	0.005000	0	106	50	150				
Zinc		ND	0.000	0.005000	0	100	50	150				
	0.000				Contra de la contr							
Sample ID			Type: LC					200.7: Dissol	ved Metal	S		
and the state of the state of the		Bate	h ID: B3	0225		RunNo: 3						
Client ID:	LCSW		D-1	1401004-		SeqNo: 9	21065	Units: mg/L				
Client ID: Prep Date:	LCSW	Analysis I										
Client ID: Prep Date: Analyte	LCSW	Analysis I Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
	LCSW	Analysis I							%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

WO#: 1511141 25-Nov-15

Client: Navajo Refining Company

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Project: Monthly Temporary RO Reject

Sample ID LCS-B	SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW	Batc	h ID: B3	0225	R	unNo: 3	0225				
Prep Date:	Analysis [Date: 11	/13/2015	S	eqNo: 9	21065	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.48	0.0020	0.5000	0	97.0	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.2	85	115			
Copper	0.47	0.0060	0.5000	0	94.8	85	115			
Iron	0.49	0.020	0.5000	0	97.5	85	115			
Manganese	0.47	0.0020	0.5000	0	93.8	85	115			
Molybdenum	0.50	0.0080	0.5000	0	101	85	115			
Nickel	0.46	0.010	0.5000	0	92.0	85	115			
Silver	0.099	0.0050	0.1000	0	99.2	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	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

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Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

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Client: Navajo Refining Company **Project:** Monthly Temporary RO Reject WO#: 1511141

25-Nov-15

WO#:	1511141
	25-Nov-15

Client: Project:	5	Refining Collins Refining Collins									
Sample ID	MB-22341	Samp	Type: MI	BLK	Tes	tCode: El	PA Method	245.1: Mercu	ry		
Client ID:	PBW	Batc	h ID: 22	341	F	RunNo: 3	0233				
Prep Date:	11/13/2015	Analysis [Date: 1	1/13/2015	5	eqNo: 9	21328	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.00020								
Sample ID	LCS-22341	Samp	Type: LC	s	Tes	tCode: El	PA Method	245.1: Mercu	ry		
Client ID:	LCSW	Batc	h ID: 22	341	F	RunNo: 3	0233				
Prep Date:	11/13/2015	Analysis [Date: 1	1/13/2015	S	eqNo: 9	21336	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0061	0.00020	0.005000	0	121	80	120			S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

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WO#:	1511141
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Client: Project:	Navajo Refining Company Monthly Temporary RO Reject			
Sample ID MB	SampType: MBLK	TestCode: EPA Method	300.0: Anions	
Client ID: PBW	Batch ID: R30015	RunNo: 30015		
Prep Date:	Analysis Date: 11/4/2015	SeqNo: 914384	Units: mg/L	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Fluoride Chloride Nitrogen, Nitrate (As N)	ND 0.10 ND 0.50 ND 0.10			
Sample ID LCS	SampType: LCS	TestCode: EPA Method	300.0: Anions	
Client ID: LCSW	Batch ID: R30015	RunNo: 30015		
Prep Date:	Analysis Date: 11/4/2015	SeqNo: 914385	Units: mg/L	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Fluoride	0.48 0.10 0.500	0 96.1 90	110	
Chloride	4.8 0.50 5.00	0 96.8 90	110	
Nitrogen, Nitrate (As N)	2.6 0.10 2.50	0 103 90	110	
Sample ID MB	SampType: MBLK	TestCode: EPA Method	300.0: Anions	
Client ID: PBW	Batch ID: R30349	RunNo: 30349		
Prep Date:	Analysis Date: 11/18/2015	SeqNo: 926243	Units: mg/L	
Analyte	Result PQL SPK valu	e 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: R30349	RunNo: 30349		
Prep Date:	Analysis Date: 11/18/2015	SeqNo: 926244	Units: mg/L	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Sulfate	9.6 0.50 10.0	0 95.7 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

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	Navajo Refining Company Monthly Temporary RO Reject									
Sample ID MB-22172		Type: ME					8011/504.1: 8	DB		
Client ID: PBW Prep Date: 11/5/201		h ID: 22			RunNo: 3 SeqNo: 9		Units: µg/L			
Prep Date. 11/5/201	S Analysis I	Jale.	1/0/2015		bequivo. s	10394				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								
Sample ID LCS-2217	2 Samp	Type: LC	s	Tes	tCode: E	PA Method	8011/504.1:	DB		
Client ID: LCSW	Bato	h ID: 22	172	F	RunNo: 3	80082				
Prep Date: 11/5/201	5 Analysis I	Date: 1	1/6/2015	S	SeqNo: 9	916395	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.044	0.010	0.05000	0	88.0	70	130			

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL
- - Page 11 of 22
- **Reporting Detection Limit**

WO#:	1511141
	25-Nov-15

and the second	Refining Co y Temporary									
Sample ID MB-22175	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	9	
Client ID: PBW	Batch	D: 22	175	F	RunNo: 3	0057				
Prep Date: 11/4/2015	Analysis D	ate: 11	1/6/2015	S	eqNo: 9	15909	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		113	72	136			
Sample ID LCS-22175	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	9	
Client ID: LCSW	Batch	D: 22	175	F	RunNo: 3	0057				
Prep Date: 11/4/2015	Analysis D	ate: 11	1/6/2015	S	eqNo: 9	15910	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	106	52.4	154			
Surr: DNOP	0.55		0.5000		111	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

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WO#:	1511141
	25-Nov-15

	Refining Co									
Sample ID 5ML RB	SampT	Гуре: ME	BLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBW	Batc	h ID: R3	0036	F	RunNo: 3	0036				
Prep Date:	Analysis D	Analysis Date: 11/5/2015			SeqNo: 9	15111	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	16		20.00		79.4	57.8	137			
Sample ID 2.5UG GRO LC	S SampT	Type: LC	s	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSW	Batch	h ID: R3	0036	F	RunNo: 3	0036				
Prep Date:	Analysis E	Date: 11	1/5/2015	S	SeqNo: 9	15112	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	80	120			
Surr: BFB	20		20.00		98.3	57.8	137			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit

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Client:Navajo Refining CompanyProject:Monthly Temporary RO Reject

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Sample ID MB-22197	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8082: PCB's				
Client ID: PBW	Batch	n ID: 22	197	F	unNo: 3	0067					
Prep Date: 11/5/2015	Analysis D	ate: 11	/6/2015	S	SeqNo: 916012 Ur			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		96.4	17.7	151				
Surr: Tetrachloro-m-xylene	2.0		2.500		82.0	20.6	151				
Sample ID LCS-22197	SampT	ype: LC	S	Tes	Code: El	PA Method	8082: PCB's				
Client ID: LCSW	Batch	n ID: 22	197	F	unNo: 3	0067					
Prep Date: 11/5/2015	Analysis D	ate: 11	/6/2015	S	eqNo: 9	16013	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aroclor 1016	2.3	1.0	5.000	0	45.2	9.01	142				
Aroclor 1260	4.3	1.0	5.000	0	86.6	25.6	164				
Surr: Decachlorobiphenyl	2.4		2.500		97.6	17.7	151				
Surr: Tetrachloro-m-xylene	2.0		2.500		80.8	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

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						10.000				
Trichloroethene (TCE)	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.7	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			
Sample ID rb3	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	D: R3	0086	R	RunNo: 3	0086				
Prep Date:	Analysis D	ate: 1	1/6/2015	S	eqNo: 9	16527	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								

Qualifiers:

2-Chlorotoluene

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded

ND

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

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WO#: 1511141 25-Nov-15

and the second se	Refining Co Temporary									
1.00	Temporary	KU KU	eject							
Sample ID rb3	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBW	Batch	ID: R3	0086	F	RunNo: 3	0086				
Prep Date:	Analysis D	ate: 11	1/6/2015	S	eqNo: 9	16527	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

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WO#: 1511141 25-Nov-15

Client:Navajo Refining CompanyProject:Monthly Temporary RO Reject

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Sample ID rb3	SampT	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch	Batch ID: R30086			RunNo: 3	0086					
Prep Date:	Analysis D	ate: 11	1/6/2015	5	SeqNo: 9	16527	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	1.5									
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130				
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130				
Surr: Dibromofluoromethane	11		10.00		107	70	130				
Surr: Toluene-d8	10		10.00		104	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

Page 17 of 22

Navajo Refining Company

WO#:	1511141
	25 May 15

Project: Month	nly Temporary	y RO Re	eject							
Sample ID MB-22195	SampT	Type: ME	3LK	Tes	tCode: El	PA Method				
Client ID: PBW	Batch	h ID: 22	195	F	unNo: 3	0048				
Prep Date: 11/5/2015	Analysis D	Analysis Date: 11/6/2015		S	eqNo: 9	16008	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	37.2	136			
Sample ID LCS-22195	SampT	Type: LC	s	TestCode: EPA Method 8310: PAHs						
Client ID: I COM	Batch ID: 22195			RunNo: 30048						
Client ID: LCSW	Batch	h ID: 22	195	F	unNo: 3	0048				
Prep Date: 11/5/2015	Batch Analysis D				tunNo: 3 GeqNo: 9		Units: µg/L			
			1/6/2015				Units: µg/L HighLimit	%RPD	RPDLimit	Qual
Prep Date: 11/5/2015	Analysis D	Date: 11	1/6/2015	S	eqNo: 9	16020		%RPD	RPDLimit	Qual
Prep Date: 11/5/2015 Analyte	Analysis D Result	Date: 11 PQL	I/ 6/2015 SPK value	SPK Ref Val	eqNo: 9 %REC	16020 LowLimit	HighLimit	%RPD	RPDLimit	Qual
Prep Date: 11/5/2015 Analyte Naphthalene	Analysis D Result 61	Date: 11 PQL 2.0	I/6/2015 SPK value 80.00	SPK Ref Val	eqNo: 9 %REC 76.4	16020 LowLimit 57.8	HighLimit 83.9	%RPD	RPDLimit	Qual
Prep Date: 11/5/2015 Analyte Naphthalene 1-Methylnaphthalene	Analysis D Result 61 64	Date: 11 PQL 2.0 2.0	I/6/2015 SPK value 80.00 80.20	SPK Ref Val 0 0	eqNo: 9 %REC 76.4 80.0	16020 LowLimit 57.8 43.5	HighLimit 83.9 88.5	%RPD	RPDLimit	Qual

Qualifiers:

Client:

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

Page 18 of 22

WO#:	1511141
	25-Nov-15

	io Refining Company hly Temporary RO Reject							
Sample ID MB-22262 Client ID: PBW	SampType: MBLK Batch ID: 22262	TestCode: Total Phenolics by SW-846 9067 RunNo: 30113						
Prep Date: 11/10/2015	Analysis Date: 11/10/2015	SeqNo: 917445	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-22262	SampType: LCS	TestCode: Total Pheno	lics by SW-846 9067					
Client ID: LCSW	Batch ID: 22262	RunNo: 30113						
Prep Date: 11/10/2015	Analysis Date: 11/10/2015	SeqNo: 917446	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 91.2 64.4	135					

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

Page 19 of 22

Client: Project:		Refining Company y Temporary RO R								
Sample ID	MB-R30473	SampType: MI	BLK	Test						
Client ID:	PBW	Batch ID: R3	R	RunNo: 30	0473					
Prep Date:		Analysis Date: 1	1/18/2015	S	eqNo: 93	30194	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide		ND 0.0100								
Sample ID	LCS-R30473	SampType: LC	cs 🛛	Test	tCode: EF	PA 335.4: T	otal Cyanide	Subbed		
Client ID:	LCSW	Batch ID: R3	30473	R	RunNo: 30	0473				
Prep Date:		Analysis Date: 1	1/18/2015	S	eqNo: 93	30195	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide		0.508	0.5000	0	102	90	110			

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL
- - Page 20 of 22

WO#: 1511141 25-Nov-15

Client:	Navajo Refining Company				
Project:	Monthly Temporary RO Reject				

Sample ID MB-R30473	SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed							
Client ID: PBW	W Batch ID: R30473		RunNo: 30473							
Prep Date:	Analysis D	ate: 11	1/16/2015	S	eqNo: 9	30255	Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.343	0.968								
Radium-226 ±	0.575	0.968								
Radium-228	-0.119	0.821								
Radium-228 ±	0.339	0.821								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- 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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WO#:	1511141
	25-Nov-15

Client: Project:	terne Meneral	efining Co Temporary									
Sample ID MB-2 Client ID: PBW	BLK 194	TestCode: SM2540C MOD: Total Dissolved Solids RunNo: 30073									
Prep Date: 11/5	/2015	Analysis D	ate: 1	1/7/2015	5	SeqNo: 91	6141	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-2	22194	SampT	ype: LC	s	Tes	tCode: SN	12540C MC	D: Total Diss	olved So	lids	
Client ID: LCSV	v	Batch	n ID: 22	194	F	RunNo: 30	073				
Prep Date: 11/5	/2015	Analysis D	ate: 1	1/7/2015	5	SeqNo: 91	6142	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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit

- Page 22 of 22

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albuq TEL: 505-345-3975 F Website: www.hall	4901 juerqu 7AX: 5	Hawkins e, NM 871 05-345-41	^{VE} ⁰⁹ Samp	ole Log-In Ch	eck List
Client Name: NAVAJO REFINING COM	Work Order Number:	15111	41		RcptNo:	1
Received by/date:	11/04/15					
Logged By: Lindsay Mangin	11/4/2015 9:05:00 AM			Struby Holgo		
Completed By: Lindsay Mangin	11/4(2015 12:07:55 PM			Junihy Hongo		
Reviewed By:	11/05/15					
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?		Cour	<u>ier</u>			
Log In						
4. Was an attempt made to cool the sample	c?	Yes		No 🗌	NA 🗔	
	5 !	165				
5. Were all samples received at a temperatu	re of >0° C to 6.0°C	Yes		No 🗌		
6. Sample(s) in proper container(s)?		Yes		No 🗔		
7. Sufficient sample volume for indicated tes	t(s)?	Yes		No 🗔		
8. Are samples (except VOA and ONG) prop	erly 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 bro	oken?	Yes		No 🛃	the formand	
12.Does paperwork match bottle labels?		Yes		No 🗀	# of preserved bottles checked . for pH:	
(Note discrepancies on chain of custody)					روج 2 or Adjusted?	12/unless noted)
13. Are matrices correctly identified on Chain	of Custody?	Yes		No 🗔	Adjusted :	NO
14. Is it clear what analyses were requested?15. Were all holding times able to be met?		Yes Yes			Checked by:	An
(If no, notify customer for authorization.)		103				/ (

Special Handling (if applicable)

16.\	Nas client notified of all d	iscrepancies with this order?	Yes 🗍	No 🗌	NA 🛃
	Person Notified:		Date:	-	
	By Whom:		Via: 🗌 eMail 🗌 Pl	hone 🗌 Fax 🗌 I	In Person
	Regarding:				
	Client Instructions:				

17. Additional remarks:

18. Cooler Information

-							
	Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
	1	1.1	Good	Yes			

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HALL ENVIRONMENTAL	ANALYSTS LABORATORY	com	4901 Hawkins NE - Albuquerque, NM 87109	505-345-4107	st					рәл	Phenols Fluoride Nitrate/Nitrii PH 504.1:EDB 504.1:EDB	X X X X Y						×					×		Remarks: Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn	VOCs: 1,1,1-I ricinforoethane; 1,1,2,2-1 etrachioroethane; 1,1,2,2-1 etrachioroethylene; 1,1,2- Trichloroethane: 1,1,2-Trichloroethylene: 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
/TRC	S LA	www.hallenvironmental.com	Jerque,	505-34	Analysis Request						olfate Chic	×													In, Hg, Mo,	chloroethal	Carbon Tel Xylenes; V ithalene, 2-
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Ime:	□ Rush		porary R.O. R). # 167796		ger.	ų	Elizabeth Salsberry	X Yes	perature: ///	Preservative Type	1-unpres 1- H2SO4	HCL	HNO3	HNO3	NaOH	HNO3	Na2S2O3	unpres	unpres	HCI	unpres	H2SO4	HCL	Relat	Mer.	
Turn-Around 11m	X Standard	Project Name:	Monthly Tem	Project #: P.O. # 167796		Project Manager:	Robert Combs	Sampler:		Sample Temperature:	Container Type and #	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	3-40ml VOA HCI	1-250mlGlass unpres	1 - 1L Glass	₹	Received by:	\sim	Received by:
Chain-of-Custody Record			Mailing Address: P.O. Box 159 Artesia,			51	🗆 evel 4 (Eull Validation)				Sample Request ID	Temporary R.O. Reject		liquid Trip Blank		aur yours	ed by:										
of-Cu	Refinery		P.O. Box		8-3311	email or Fax#: 575-746-5451					Matrix	9:20 liquid	9:20 liquid	9.20 liquid	9:20 liquid	9:20 liquid	Relinquish Or	CV OR	Relinquished by:								
hain-	Navajo Refinery		Address:	11-0159	Phone #: 575-748-3311	Fax#: 57	ackage:	Ŀ	EDD (Type)		Time	9:20	9:20	9.20	9:20	9:20	9:20	9:20	9:20	9:20	9:20		9:20	9:20		5	Time:
Ū	Client:		Mailing /	NM 88211-0159	Phone #	email or	QA/QC Package: X Standard				Date	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	11/3/15	Date:	dien	Date:

Project Nam	Project Name Blannual KU Keject			-				_			
Samplers Nam	Samplers Name Elizabeth Salsberry			<u>.</u>	Time V	Veighted	Time Weighted Composite				
Samplers Affiliatic	Samplers Affiliation Navajo Refining Co. LLC	0			Flow V	Veighted	Flow Weighted Composite				station and Sludge LJ
Start Date and Tin	Start Date and Time 11/3/2015 @ 9:15am			4					-		
End Date and Tim	End Date and Time 11/3/2015 @ 9:30am				Рап	ls / Samp	Parts / Sample Intervals One	sjOne	_		type of sampler juneary to sample jars
Outfall / Sample Location:	ocation:	North Field R.O., Reject Discarge	.O. Reject	Discarge	U	<u>ج</u>	South Fie	South Field R.O. Reject Discarge	t Discarge		
		_					Preservatives	tives			
N		Containers	Neat	5	FUSCH SUNH	15×04	HO ^c N	EUCSC#N	NaHSO4	Other	Analysis and/or Method Requested
1 500ml		2	×			×					pH, CI, F, S04, NO2/NO3, TDS
2 40ml	VOA	з		X							8015 GRO
3 500ml	1 Plastic	1			×						6020 total metals, 7470 Hg
4 125ml	Plastic				×						6020 Dissolved Metals
5 500ml	l Plastic	2					×				Cyanide
6 1L	Plastic	ω			×						Radium 226/228
7 40ml	VOA	2		×							8260 see attached list
8 1L	Glass		×								8270 see attached list
9,000 1L	Glass	2	×					_			8082 PCBs
10 40ml	VOA	2	×								8015 DRO
11 40ml	VOA	2	:	×							Radium 226/228
Field Data (Weather Date and Time:	Field Data (Weather, Observations, Etc): Date and Time:	11/3/2015 Tmp.59.0°F, Humidity 63%, Wind Dir. SSE, Wind Speed 6.9mph, Conditions Clear	np.59.0°F,	Humidity	/ 63% , \	Nind Dir.	SSE, Win	d Speed 6.9m	ph, Condition	ıs Clear	Storage Method
Field Temp. 22.1C	Field pH 7.84										Other
											Shipping Media

Monthly Temporary RO Reject Sample Details

Flow Weighted Composite	Time Weighted Composite	Grab 🖸	Sample Type

LLYFRONTIER

The HollyFrontier Companies

Type of Sampler Directly to sample jars	Solid Liquid Siudge
---	---------------------------

Project Name Biannual RO Reject Samplers Name Elizabeth Salsberry

Navajo Refining Company, LLC 501 E. Main Artesia, NM 88210 (Tel) 575.748.3311 (Fax) 575.746.5451



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.

OCD January 15, 2016 Page 2 of 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.

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

OCD January 15, 2016 Page 3 of 3

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

		Permaner	nt RO Units		Tempor	ary Unit	Daily Discharge Volume
	Metere	ed Data		l RO Reject (Calculated)	(Calculate	ect Discharge d from Log ta)	*
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	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

Daily RO Reject Discharge Flow Rate Measurements and Calculated Daily Discharge

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 A	mount:	\$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

OrderNo.: 1512236

RE: Monthly RO Reject

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1512236

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Project: Monthly RO Reject

Date Reported: 1/6/2016

Client Sample ID: R.O. Reject Collection Date: 12/3/2015 9:00:00 AM Paceived Date: 12/4/2015 0.20.00 AM

Lab ID: 1512236-001	Matrix:	AQUEOUS	S			/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	A3079
Lead	ND	0.00050		mg/L	1	12/9/2015 9:48:48 PM	B3074
Selenium	0.0054	0.0010		mg/L	1	12/9/2015 9:48:48 PM	B3074
Uranium	0.0032	0.00050		mg/L	1	12/9/2015 9:48:48 PM	B3074
EPA 903.1: RA 226 AND EPA 904.0: RA	228-SUBBE	D				Analyst	SUB
Radium-226	0.207	0.980		pCi/L	1	12/17/2016	R3127
Radium-226 ±	0.543	0.980		pCi/L	1	12/17/2016	R3127
Radium-228	0.194	0.680		pCi/L	1	12/17/2016	R3127
Radium-228 ±	0.311	0.680		pCi/L	1	12/17/2016	R3127
EPA METHOD 300.0: ANIONS						Analyst	LGT
Fluoride	2.2	2.0		mg/L	20	12/5/2015 3:40:40 AM	A3065
Chloride	110	25		mg/L	50	12/23/2015 3:12:14 AM	A3104
Sulfate	980	25		mg/L	50	12/23/2015 3:12:14 AM	
Nitrate+Nitrite as N	1.2	1.0		mg/L	5	12/23/2015 3:37:03 AM	R3104
SM2540C MOD: TOTAL DISSOLVED SO	LIDS					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	R3100
SM4500-H+B: PH						Analyst	MRA
pH	7.86	1.68	н	pH units	1	12/7/2015 1:38:04 PM	R3065
EPA METHOD 200.7: DISSOLVED META	LS					Analyst	ELS
Aluminum	ND	0.020		mg/L	1	12/8/2015 8:30:22 PM	B3069
Barium	0.035	0.0020		mg/L	1	12/8/2015 8:30:22 PM	B3069
Boron	0.094	0.040		mg/L	1	12/8/2015 8:30:22 PM	B3069
Cadmium	ND	0.0020		mg/L	1	12/8/2015 8:30:22 PM	B3069
Chromium	ND	0.0060		mg/L	1	12/14/2015 2:34:53 PM	
Cobalt	ND	0.0060		mg/L	1	12/8/2015 8:30:22 PM	B3069
Copper	ND	0.0060		mg/L	1	12/8/2015 8:30:22 PM	B3069
Iron	ND	0.020		mg/L	1	12/8/2015 8:30:22 PM	B3069
Manganese	ND	0.0020		mg/L	1	12/8/2015 8:30:22 PM	B3069
Molybdenum Nickel	ND	0.0080 0.010		mg/L	1	12/17/2015 2:18:43 PM 12/8/2015 8:30:22 PM	
Silver	ND ND	0.0050		mg/L mg/L	1 1	12/8/2015 8:30:22 PM	B3069 B3069
Zinc	0.020	0.0030		mg/L	1	12/17/2015 2:18:43 PM	
EPA METHOD 245.1: MERCURY	0.020	0.010		ing/L		Analyst	
Mercury	ND	0.00020		mg/L	1	12/11/2015 11:02:05 AI	
Refer to the QC Summary report an							

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Qualifiers:

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

% Recovery outside of range due to dilution or matrix S

B Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits Page 1 of 22 J

Р Sample pH Not In Range

Reporting Detection Limit RL

Analytical Report Lab Order 1512236

Hall Environmental Analysis Laboratory, Inc.

Lab Order **1512236** Date Reported: **1/6/2016**

CLIENT: Navajo Refining Company Project: Monthly RO Reject

Project: Monthly RO I Lab ID: 1512236-001

ł

Client Sample ID: R.O. Reject Collection Date: 12/3/2015 9:00:00 AM Received Date: 12/4/2015 9:20:00 AM

Lab ID: 1512250-001	Matrix.	AQUEUUS	Receiveu	Jate. 12	4/2015 9.20.00 Alvi	
Analyses	Result	RL Q	ual 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 RAN	GE				Analyst:	том
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 RAI	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	12/10/2015 12:52:34 AM	A A 30727
Surr: BFB	86.5	49.5-130	%REC	1	12/10/2015 12:52:34 AM	A A 30727
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

Matrix: AQUEOUS

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

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Qualifiers:

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 22
- P Sample pH Not In Range
- RL Reporting Detection Limit

Analytical Report Lab Order 1512236

Date Reported: 1/6/2016

CLIENT: Navajo Refining Company Project: Monthly RO Reject			Client Sampl Collection 1		O. Reject /3/2015 9:00:00 AM	
Lab ID: 1512236-001	Matrix:	AQUEOUS	Received 1	Date: 12	/4/2015 9:20:00 AM	
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analys	t: 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

2.5

µg/L

1

12/14/2015

ND

Hall Environmental Analysis Laboratory, Inc.

TOTAL PHENOLICS BY SW-846 9067

Phenolics, Total Recoverable

Analyst: SCC

22770

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 22
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

WO#:	1512236
	06-Jan-16

Client: Project:		Navajo Refining C Monthly RO Rejec									
Sample ID	MB-B	Samp	Type: MI	BLK	Tes	tCode: E	PA Method	200.7: Dissol	ved Metal	s	
Client ID:	PBW	Batc	h ID: B3	0690	F	RunNo: :	30690				
Prep Date:		Analysis I				SeqNo:		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	0.0020								
Silver		ND	0.0050								
			0.0000								
Sample ID		Samp	Type: LC	S				200.7: Dissol	ved Metal	s	
Client ID:	LCSW	Bato	h ID: B3	0690	F	RunNo:	30690				
Prep Date:		Analysis I	Date: 12	2/8/2015	S	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		115			
Sample ID		-B Samp	Type: LC	SLL	Tes	tCode: E	PA Method	200.7: Dissol	ved Metal	s	
Client ID:	BatchQ	C Batc	h ID: B3	0690	F	RunNo: 3	30690				
Prep Date:		Analysis I	Date: 1	2/8/2015	5	SeqNo:	937147	Units: mg/L			
Analyte		Result	PQL		SPK Ref Val	%REC		HighLimit	%RPD	RPDLimit	Qual
Aluminum		ND	0.020	0.01000	0	91.5		150			
Barium		0.0022	0.0020	0.002000	0	109		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			
		0.021	0.020	0.02000	0	104		150			
Iron		0.021	0.020	0.02000	0	104	50	100			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

Page 4 of 22

Client: Project:	5	efining Co RO Rejec									
Sample ID	LLLCS-B	Samp	Type: LC	SLL	Tes	tCode: El	PA Method	200.7: Dissol	ved Metal	ls	
Client ID:	BatchQC	Batc	h ID: B3	0690	F	RunNo: 3	0690				
Prep Date:		Analysis [Date: 12	2/8/2015	5	SeqNo: 9	37147	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	МВ-В	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	200.7: Dissol	ved Metal	ls	
Client ID:	PBW	Batc	h ID: B3	0821	F	RunNo: 3	0821				
Prep Date:		Analysis [Date: 1	2/14/2015	S	SeqNo: 9	41747	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	Samp	Type: LC	s	Tes	tCode: El	PA Method	200.7: Dissol	ved Metal	ls	
Client ID:	LCSW	Batc	h ID: B3	0821	F	RunNo: 3	0821				
Prep Date:		Analysis [Date: 12	2/14/2015	S	BeqNo: 9	41748	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	Samp	Type: LC	SLL	Tes	tCode: El	PA Method	200.7: Dissol	ved Meta	ls	
Client ID:	BatchQC	Batc	h ID: B3	0821	F	RunNo: 3	0821				
Prep Date:		Analysis [Date: 12	2/14/2015	S	SeqNo: 9	41749	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	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	200.7: Dissol	ved Metal	ls	
Client ID:	PBW	Batc	h ID: B3	0929	F	RunNo: 3	0929				
Prep Date:		Analysis [Date: 1	2/17/2015	5	SeqNo: 9	45585	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	Samp	Type: LC	s	Tes	tCode: El	PA Method	200.7: Dissol	ved Meta	ls	
Client ID:	LCSW	Batc	h ID: B3	0929	F	RunNo: 3	0929				
Prep Date:		Analysis [Date: 1	2/17/2015	5	SeqNo: 9	45586	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:

Client:

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

Page 5 of 22

1512236 06-Jan-16

WO#:

SampType: MS

Result

Batch ID: B30929

Analysis Date: 12/17/2015

PQL

	· ·								
Samp	Type: LC	SLL	Test	Code: El	PA Method	200.7: Dissol	ved Metal	s	
Batc	h ID: B3	0929	R	unNo: 3	0929				
Analysis [Date: 12	2/17/2015	S	eqNo: 9	45587	Units: mg/L			
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
0.0097	0.0080	0.008000	0	122	50	150			
ND	0.010	0.005000	0	101	50	150			
	RO Rejec Samp Batc Analysis I Result 0.0097	Batch ID: B3 Analysis Date: 12 Result PQL 0.0097 0.0080	RO Reject SampType: LCSLL Batch ID: B30929 Analysis Date: 12/17/2015 Result PQL SPK value 0.0097 0.0080 0.008000	RO Reject SampType: LCSLL Test Batch ID: B30929 R Analysis Date: 12/17/2015 S Result PQL SPK value SPK Ref Val 0.0097 0.0080 0	RO Reject SampType: LCSLL TestCode: El Batch ID: B30929 RunNo: 3 Analysis Date: 12/17/2015 SeqNo: 9 Result PQL SPK value SPK Ref Val %REC 0.0097 0.0080 0.008000 0 122	RO Reject TestCode: EPA Method Batch ID: B30929 RunNo: 30929 Analysis Date: 12/17/2015 SeqNo: 945587 Result PQL SPK value SPK Ref Val %REC LowLimit 0.0097 0.0080 0 122 50	RO Reject TestCode: EPA Method 200.7: Dissol Batch ID: B30929 RunNo: 30929 Analysis Date: 12/17/2015 SeqNo: 945587 Units: mg/L Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit 0.0097 0.0080 0 122 50 150	RO Reject TestCode: EPA Method 200.7: Dissolved Metal Batch ID: B30929 RunNo: 30929 Analysis Date: 12/17/2015 SeqNo: 945587 Units: mg/L Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD 0.0097 0.0080 0 122 50 150	RO Reject SampType: LCSLL TestCode: EPA Method 200.7: Dissolved Metals Batch ID: B30929 RunNo: 30929 Analysis Date: 12/17/2015 SeqNo: 945587 Units: mg/L Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit 0.0097 0.0080 0 122 50 150

LowLimit

RunNo: 30929

SeqNo: 945614

%REC

TestCode: EPA Method 200.7: Dissolved Metals

Units: mg/L

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	Samp	Type: MS	D	Tes	tCode: El	PA Method	200.7: Dissol	ved Meta	ls	
Client ID:	R.O. Reject	Bato	h ID: B3	0929	F	RunNo: 3	0929				
Prep Date:	ŝ	Analysis I	Date: 12	/17/2015	S	SeqNo: 9	45615	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	

SPK value SPK Ref Val

Qualifiers:

Client:

Project:

Client ID:

Prep Date:

Analyte

Molybdenum Zinc

Prep Date:

Analyte

Sample ID LLLCS-B

BatchQC

Sample ID 1512236-001GMS

Client ID: R.O. Reject

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- 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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WO#: 1512236

06-Jan-16

Project: Monthly RO Reject Sample ID 1512236-001GMSLL SampType: MS TestCode: EPA 200.8: Dissolved Metals Client ID: R.O. Reject Datch ID: B30746 RunNo: 30746 Prep Date: Analysis Date: 12/9/2015 SeqNo: 939236 Units: mg/L Analyte Result POL SPK value SPK Ref Val KREC LowLinit: HighLimit % RPD RPDLimit Qual Lead 0.013 0.00050 0.01250 0.003210 115 70 130 Sample ID LCS SampType: LCS TestCode: EPA 200.8: Dissolved Metals Elected Client ID: LCSW Batch ID: B30746 RunNo: 30746 North: mg/L Analyste Result POL SPK value SPK Ref Val % REC LowLinit: HighLimit % RPD RPDLimit Qual Lead 0.012 0.00050 0.01250 0 97.3 85 115 Sensolved Metals Client ID: Batch ID: B30746 RunNo: 30746 No No No No No No No No No <td< th=""><th>Client:</th><th>Navajo Re</th><th>1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1</th><th></th><th>/</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	Client:	Navajo Re	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		/							
Client ID: R.O. Reject Prep Date: Datch ID: B30746 RunNo: 30746 Prep Date: Analysis Date: 12/9/2015 SeqNo: 939236 Units: mg/L Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Load 0.013 0.00050 0.01250 0 104 70 130 Selenium 0.030 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: 339237 Units: mg/L Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Load 0.012 0.00050 0.0250 9	Project:	Monthly F	to Reje	ct								
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 Land 0.013 0.0050 0.01250 0 104 70 130 Selenium 0.030 0.00500 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: 393237 Units: mg/L Analysis Date: 12/9/2015 SeqNo: 393237 Units: mg/L Lad 0.012 0.00050 0.01250 0 97.3 85 115 Lad 0.012 0.00050 0.01250 0 98.1 85 115	Sample ID	1512236-001GMSL	L Samp	Type: M	S	Tes	tCode: El	PA 200.8: [Dissolved Met	als		
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 0.038 0.0010 0.02500 0.003578 98.7 70 130 Iannium 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: Analytis Date 129/2015 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 9 97.3 85 115 Sample ID LLLCS SampType: LCSLL TestCo	Client ID:	R.O. Reject	Bat	ch ID: B	30746	F	RunNo: 3	0746				
Lised 0.013 0.00050 0.01250 0 104 70 130 Selenium 0.030 0.0010 0.02500 0.005378 98.7 70 130 Sample ID LCS SampType: LCS TestCode: EPA 200.8: Dissolved Metals Client ID: LCSW Batch ID: B30746 Runko: 30746 Prep Date: Analysis Date: 12/9/2015 SeqNo: 939237 Units: mg/L Analyte Result PQL SPK value SPK Kef 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 98.1 85 115 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: Batch ID: B30746 RunNo: 30746 Prep Date: Analysis Date:	Prep Date:		Analysis	Date: 1	2/9/2015	5	SeqNo: 9	39236	Units: mg/L			
Selenium 0.030 0.0010 0.02500 0.005378 98.7 70 130 Sample ID LCS SampType: LCS SampType: LCS Runhv: 30746 Runhv: 30746 Prep Date: Analysis Date: 129/2015 SeqNo: 93237 Units: mg/L Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Lad 0.012 0.00050 0.01250 0 97.3 85 115 Units: mg/L Selenium 0.024 0.0010 0.02500 0 96.0 85 115 Units: MRPD RPDLimit Qual Lad 0.012 0.00050 0.01250 0 98.1 85 115 Units: MRPD RPDLimit Qual Lad 0.012 0.00050 0.01250 0 99.3 50 150 Units: MRPD NPD Limit Qual Lad	Analyte		0.805950000	201242	1	Contraction of the second second second	Sector Provident			%RPD	RPDLimit	Qual
Utanium 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 0.00050 0.01250 0 98.1 85 115 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: Batch ID: B30746 RunNo: 30746 RPD Limit Qual Lead ND 0.00050 0.00050 0 97.8 50 150												
Sample ID LCS SampType: LCS TestCode: EPA 200.8: Dissolved Metals Client ID: LCSW Batch ID: B30746 RunNo: 30746 Prep Date: Analysis Date: 129/2015 SeqNo: 39237 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 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: BatchQC Batch ID: B30746 RunNo: 30746 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: Batch QC Batch ID: B30746 RunNo: 30746 Prep Date: Analysis Date: 129/2015 SeqNo: 393238 Units: mg/L												
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 Salenium 0.024 0.0010 0.02500 0 98.1 85 115 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: Batch QC Batch ID: B30746 RunNo: 30746 Prep Date: Analyte Result PQL SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Lead ND 0.00050 0 99.9 50 150 Lead ND 0.00050 0.000500 <td>Uranium</td> <td></td> <td>0.018</td> <td>0.00050</td> <td>0.01250</td> <td>0.003210</td> <td>115</td> <td>70</td> <td>130</td> <td></td> <td></td> <td></td>	Uranium		0.018	0.00050	0.01250	0.003210	115	70	130			
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 98.0 85 115 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: BatchQC Batch ID: B30746 RunNo: 30746 Prep Date: Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Lead ND 0.00050 0 99.9 50 150 150 Selenium ND 0.00050 0.0005000 97.3 50 150 150 Lead ND 0.00050 0.000500 97.3 50 150 150 Selenium	Sample ID	LCS	Samp	Type: L	cs	Tes	tCode: El	PA 200.8: [Dissolved Met	als		
Analyte Result PQL SPK ratue 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 Sample ID LLLCS SampType: LCSLL TestCode: EPA 200.8: Dissolved Metals Client ID: Batch QC Batch ID: B30746 RunNo: 30746 Prep Date: Analytis Delt PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Lead ND 0.00050 0.000500 0 99.9 50 150 150 Lead ND 0.00050 0.000500 0 97.8 50 150 Sample ID MB SampType: MBLK TestCode: EPA 200.8: Dissolved Metals Client ID: P	Client ID:	LCSW	Bat	ch ID: B	30746	F	RunNo: 3	0746				
Lead 0.012 0.00050 0.01250 0 97.3 85 115 Selenium 0.024 0.0010 0.02500 0 96.0 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 Value SPK 200.8: Dissolved Metals Lead ND 0.00050 0.005000 9.9.9 50 150 Selenium ND 0.00050 0.005000 9.7.3 50 150 Uranium ND 0.000500 0 97.3 50 150 Sample ID MB SampType: MBLK TestCode: EPA 200.8: Dissolved Metals Client ID: Client ID: PBW Batch ID: E30746 RunNo: 30746 Prep Date: Analysis Date: 12/9/2015 SeqNo: 939239 Units: mg/L <th>Prep Date:</th> <th></th> <th>Analysis</th> <th>Date: 1</th> <th>2/9/2015</th> <th>5</th> <th>SeqNo: 9</th> <th>39237</th> <th>Units: mg/L</th> <th></th> <th></th> <th></th>	Prep Date:		Analysis	Date: 1	2/9/2015	5	SeqNo: 9	39237	Units: mg/L			
Selenium 0.024 0.010 0.02500 0 96.0 85 115 Sample ID LLLCS SampType: LCSL 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 0.000500 0 97.8 50 150 Selenium ND 0.00050 0.000500 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
Utanium 0.012 0.0050 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 0.000500 0 99.9 50 150 Variatium ND 0.00050 0.000500 0 97.8 50 150 Variatium ND 0.00050 0.000500 0 97.3 50 150 Variatium ND 0.00050 0.000500 939239 Units: mg/L Analyte Result PQL SPK value SPK Ref Val %REC LowLimit High	Lead		0.012	0.00050	0.01250	0	97.3	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 0.00100 0.097.8 50 150 150 Vranium ND 0.00050 0.000500 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%	Selenium					0						
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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 99.9 50 150 Selenium ND 0.0010 0.001000 0 97.8 50 150 Vranium ND 0.00050 0 97.3 50 150	Sample ID	LLLCS	Samp	Type: L	CSLL	Tes	tCode: El	PA 200.8: [Dissolved Met	als		
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Lead ND 0.00050 0.000500 0 99.9 50 150 Selenium ND 0.0010 0.001000 0 97.8 50 150 Varaium 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 0.00050 Selenium ND 0.00050 Sample ID 1512236-001GMSLL SampType:	Client ID:	BatchQC	Bat	ch ID: B	30746	F	RunNo: 3	0746				
Lead ND 0.00050 0.000500 0 99.9 50 150 Selenium ND 0.0010 0.001000 0 97.8 50 150 Uranium ND 0.00050 0.000500 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 0.00050 Selenium ND 0.00050 Selenium ND 0.00050 Selenium ND 0.00050 Selenium ND 0.00050 Sample ID 1512226-001GMSLL SampType: MS TestCode: <	Prep Date:		Analysis	Date: 1	2/9/2015	5	SeqNo: 9	39238	Units: mg/L			
Selenium Uranium ND 0.0010 0.001000 0 97.8 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 SeqNo: 939239 Units: mg/L Sample ID 15122236-001GMSLL 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 <td>Analyte</td> <td></td> <td>Result</td> <td>PQL</td> <td>SPK value</td> <td>SPK Ref Val</td> <td>%REC</td> <td>LowLimit</td> <td>HighLimit</td> <td>%RPD</td> <td>RPDLimit</td> <td>Qual</td>	Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium ND 0.00050 0.000500 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 0.00050 Vision	Lead		ND	0.00050	0.0005000	0	99.9	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 ND 0.0010 Vanium 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	Selenium		ND	0.0010	0.001000	0	97.8	50	150			
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 Varianium 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	Uranium		ND	0.00050	0.0005000	0	97.3	50	150			
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 ND 0.0010 Viranium ND 0.00050 Selenium ND 0.00050 Viranium ND 0.00050 Viranium Viranium 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	Sample ID	МВ	Samp	Type: M	BLK	Tes	tCode: El	PA 200.8: [Dissolved Met	als		
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Lead ND 0.00050 ND 0.0010 Image: Selenium ND 0.0010 Image: Selenium ND 0.00050 Image: Selenium ND 0.00050 Image: Selenium Image	Client ID:	PBW	Bat	ch ID: B	30746	F	RunNo: 3	0746				
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 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	Prep Date:		Analysis	Date: 1	2/9/2015	5	SeqNo: 9	39239	Units: mg/L			
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	Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	Lead		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	Selenium		ND	0.0010								
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	Uranium		ND	0.00050								
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	Sample ID	1512236-001GMSL	L Samp	Type: M	S	Tes	tCode: El	PA 200.8: [Dissolved Met	als		
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	Client ID:	R.O. Reject	Bat	ch ID: A	30798	F	RunNo: 3	0798				
	Prep Date:		Analysis	Date: 1	2/11/2015	S	SeqNo: 9	41037	Units: mg/L			
Arsenic 0.13 0.0050 0.1250 0.001076 101 70 130	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

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Client: Project:		ijo Refining Company thly RO Reject	y							
Sample ID	LCS	SampType: L	cs	Tes	tCode: El	PA 200.8: I	Dissolved Me	tals		
Client ID:	LCSW	Batch ID: A	30798	F	RunNo: 3	0798				
Prep Date:		Analysis Date:	2/11/2015	S	SeqNo: 9	41051	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	LLLCS	SampType: L	CSLL	Tes	tCode: El	PA 200.8: I	Dissolved Me	tals		
Client ID:	BatchQC	Batch ID: A	30798	F	RunNo: 3	0798				
Prep Date:		Analysis Date:	2/11/2015	S	SeqNo: 9	41054	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	МВ	SampType: N	IBLK	Tes	tCode: El	PA 200.8: I	Dissolved Me	tals		
Client ID:	PBW	Batch ID: A	30798	F	RunNo: 3	0798				
Prep Date:		Analysis Date:	2/11/2015	5	SeqNo: 9	41056	Units: mg/L			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND 0.0010)		- 10 m (C) (C)					

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL



Client: Project:		o Refining Company nly RO Reject						
Sample ID	MB-22710	SampType: MBLK	Tes	tCode: EPA Method	245.1: Mercu	ry		
Client ID:	PBW	Batch ID: 22710	F	RunNo: 30788				
Prep Date:	12/9/2015	Analysis Date: 12/11/201	5 5	SeqNo: 940469	Units: mg/L			
Analyte		Result PQL SPK va	lue SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND 0.00020						
Sample ID	LCS-22710	SampType: LCS	Tes	tCode: EPA Method	245.1: Mercu	ry		
Client ID:	LCSW	Batch ID: 22710	F	RunNo: 30788				
Prep Date:	12/9/2015	Analysis Date: 12/11/201	; ;	SeqNo: 940470	Units: mg/L			
Analyte		Result PQL SPK va	lue SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051 0.00020 0.0050	0 00	102 80	120			

Qualifiers:

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- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

WO#: 1512236 06-Jan-16

Client: Project:		Navajo Refining Con Monthly RO Reject	npany								
Sample ID	MB	SampTy	pe: ME	BLK	Tes	tCode: El	PA Method	300.0: Anion	s		
Client ID:	PBW	Batch	ID: A3	0652	F	RunNo: 3	0652				
Prep Date:		Analysis Da	ate: 12	2/5/2015	S	SeqNo: 9	36397	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		ND	0.10								
Sample ID	LCS	SampTy	pe: LC	s	Tes	tCode: El	PA Method	300.0: Anion	S		
Client ID:	LCSW	Batch	ID: A3	0652	F	RunNo: 3	0652				
Prep Date:		Analysis Da	ate: 12	2/5/2015	S	SeqNo: 9	36398	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	мв	SampTy	pe: ME	BLK	Tes	tCode: El	PA Method	300.0: Anion	s		
Client ID:	PBW	Batch	ID: R3	1049	F	RunNo: 3	1049				
Prep Date:		Analysis Da	ate: 12	2/22/2015	5	SeqNo: 9	49718	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite	as N	ND	0.20	1.1.1	1.1.1	1.1.1					
	88 B. (199	ND	0.20								
Sample ID		SampTy	CONTRACTOR OF THE OWNER OWNE	s	Tes	tCode: El	PA Method	300.0: Anion:	s		
Sample ID Client ID:	LCS	SampTy	CONTRACTOR OF THE OWNER OWNE			tCode: El RunNo: 3		300.0: Anion	S		
	LCS LCSW	SampTy	rpe: LC	1049	F		1049	300.0: Anion Units: mg/L			
Client ID:	LCS LCSW	SampTy Batch	rpe: LC	1049 2/22/2015	F	RunNo: 3 SeqNo: 9	1049			RPDLimit	Qual
Client ID: Prep Date:	LCS LCSW	SampTy Batch Analysis Da	rpe: LC ID: R3 ate: 12	1049 2/22/2015	F	RunNo: 3 SeqNo: 9	1049 49719	Units: mg/L		RPDLimit	Qual
Client ID: Prep Date: Analyte	LCS LCSW as N	SampTy Batch Analysis Da Result	rpe: LC ID: R3 ate: 12 PQL 0.20	1049 2/22/2015 SPK value 3.500	F S SPK Ref Val 0	RunNo: 3 SeqNo: 9 %REC 95.9	1049 49719 LowLimit 90	Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Nitrate+Nitrite	LCS LCSW as N MB	SampTy Batch Analysis Da Result 3.4 SampTy	rpe: LC ID: R3 ate: 12 PQL 0.20	1049 2/22/2015 SPK value 3.500 BLK	F S SPK Ref Val 0 Tes	RunNo: 3 SeqNo: 9 %REC 95.9	1049 49719 LowLimit 90 PA Method	Units: mg/L HighLimit 110	%RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3	1049 2/22/2015 SPK value 3.500 BLK 1049	F SPK Ref Val 0 Tes F	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El	1049 49719 LowLimit 90 PA Method 1049	Units: mg/L HighLimit 110	%RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID:	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015	F SPK Ref Val 0 Tes F	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3	1049 49719 LowLimit 90 PA Method 1049	Units: mg/L HighLimit 110 300.0: Anions	%RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte Chloride	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result ND	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3 ate: 12 PQL 0.50	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015	F SPK Ref Val 0 Tes F S	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9	1049 49719 LowLimit 90 PA Method 1049 49774	Units: mg/L HighLimit 110 300.0: Anion: Units: mg/L	%RPD		
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3 ate: 12 PQL	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015	F SPK Ref Val 0 Tes F S	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9	1049 49719 LowLimit 90 PA Method 1049 49774	Units: mg/L HighLimit 110 300.0: Anion: Units: mg/L	%RPD		
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte Chloride	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result ND	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3 ate: 12 PQL 0.50 0.50	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015 SPK value	F SPK Ref Val 0 Tes F SPK Ref Val	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9 %REC	1049 49719 200 PA Method 1049 49774 LowLimit	Units: mg/L HighLimit 110 300.0: Anion: Units: mg/L	%RPD s %RPD		
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte Chloride Sulfate	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result ND ND SampTy	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3 ate: 12 PQL 0.50 0.50	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015 SPK value	F SPK Ref Val 0 Tes SPK Ref Val Tes	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9 %REC	1049 49719 LowLimit 90 PA Method 1049 49774 LowLimit PA Method	Units: mg/L HighLimit 110 300.0: Anions Units: mg/L HighLimit	%RPD s %RPD		
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte Chloride Sulfate Sample ID	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result ND ND SampTy	Ppe: LC ID: R3 ate: 12 PQL 0.20 ppe: ME ID: A3 ate: 12 PQL 0.50 0.50 0.50 ppe: LC ID: A3	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015 SPK value SS 1049	F SPK Ref Val 0 Tes SPK Ref Val Tes F	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9 %REC	1049 49719 90 PA Method 1049 49774 LowLimit PA Method 1049	Units: mg/L HighLimit 110 300.0: Anions Units: mg/L HighLimit	%RPD s %RPD		
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte Chloride Sulfate Sample ID Client ID: Prep Date: Analyte	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result ND ND SampTy Batch Analysis Da Result	rpe: LC ID: R3 ate: 12 PQL 0.20 ID: A3 ate: 12 0.50 0.50 ID: A3 ate: 12 PQL ID: A3 ate: 12 PQL	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015 SPK value 2/23/2015 SPK value	F SPK Ref Val 0 Tes SPK Ref Val Tes F SPK Ref Val	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9 %REC tCode: El RunNo: 3 SeqNo: 9 %REC	1049 49719 200 PA Method 1049 49774 200Limit PA Method 1049 49775 200Limit	Units: mg/L HighLimit 110 300.0: Anion: Units: mg/L HighLimit 300.0: Anion: Units: mg/L HighLimit	%RPD s %RPD		
Client ID: Prep Date: Analyte Nitrate+Nitrite Sample ID Client ID: Prep Date: Analyte Chloride Sulfate Sample ID Client ID: Prep Date:	LCS LCSW as N MB PBW	SampTy Batch Analysis Da Result 3.4 SampTy Batch Analysis Da Result ND ND SampTy Batch Analysis Da	rpe: LC ID: R3 ate: 12 PQL 0.20 rpe: ME ID: A3 ate: 12 PQL 0.50 0.50 0.50 rpe: LC ID: A3 ate: 12 ate: 12	1049 2/22/2015 SPK value 3.500 3LK 1049 2/23/2015 SPK value SS 1049 2/23/2015	F SPK Ref Val 0 Tes SPK Ref Val Tes F S	RunNo: 3 SeqNo: 9 %REC 95.9 tCode: El RunNo: 3 SeqNo: 9 %REC tCode: El RunNo: 3 SeqNo: 9	1049 49719 LowLimit 90 PA Method 1049 49774 LowLimit PA Method 1049 49775	Units: mg/L HighLimit 110 300.0: Anion: Units: mg/L HighLimit 300.0: Anion: Units: mg/L	%RPD s %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

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Client: Project:	1254KG	ijo Refining Co thly RO Reject									
Sample ID	MB-22664	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8011/504.1: E	DB		
Client ID:	PBW	Batch	ID: 22	664	F	RunNo: 3	0705				
Prep Date:	12/8/2015	Analysis D	ate: 12	2/9/2015	5	SeqNo: 9	37923	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoeth	ane	ND	0.010								
Sample ID	LCS-22664	SampT	ype: LC	S	Tes	tCode: El	PA Method	8011/504.1: E	DB		
Client ID:	LCSW	Batch	ID: 22	664	F	RunNo: 3	0705				
Prep Date:	12/8/2015	Analysis D	ate: 12	2/9/2015	S	SeqNo: 9	37924	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoeth	ane	0.10	0.010	0.1000	0	101	70	130			

Qualifiers:

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- D Sample Diluted Due to Matrix
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- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

en a la companya de l	Refining Co / RO Reject									
Sample ID MB-22645	Samp	Type: MI	BLK	Tes	tCode: E	PA Method	8015M/D: Die	sel Rang	e	
Client ID: PBW	Batc	h ID: 22	645	F	RunNo: 3	0655				
Prep Date: 12/7/2015	Analysis [Date: 1	2/7/2015	S	SeqNo: 9	36459	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	Samp	Type: LC	s	Tes	tCode: E	PA Method	8015M/D: Die	sel Rang	e	
Client ID: LCSW	Batc	h ID: 22	645	F	RunNo: 3	0655				

Prep Date: 12/7/2015	Analysis D	ate: 1	2/7/2015	5	SeqNo: 9	36460	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:

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- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

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an a constant and the s	efining Co RO Reject	- ·								
Sample ID 5ML RB	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBW	Batch	n ID: A3	0727	F	RunNo: 3	0727				
Prep Date:	Analysis D	ate: 12	2/9/2015	S	SeqNo: 9	38906	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050	1.1							
Surr: BFB	18		20.00		92.4	49.5	130			
Sample ID 2.5UG GRO LCS	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSW	Batch	n ID: A3	0727	F	RunNo: 3	0727				
Prep Date:	Analysis D	ate: 12	2/9/2015	S	SeqNo: 9	38907	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			

113

49.5

130

20.00

Qualifiers:

Surr: BFB

- Value exceeds Maximum Contaminant Level. *
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- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL

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QC SUMMARY REPORT	
Hall Environmental Analysis Laboratory, Inc.	

WO#:	1512236				
	06 Jan 16				

Client: Project:		Refining Co y RO Reject									
Sample ID	MB-22699	SampT	ype: ME	BLK	Tes	tCode: El	PA Method				
Client ID:	PBW	Batch	D: 22	699	F	RunNo: 3	0771				
Prep Date:	12/9/2015	Analysis Date: 12/11/2015			S	eqNo: 9	39925	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: Decach	nlorobiphenyl	2.0		2.500		78.4	17.7	151			
Surr: Tetrach	nloro-m-xylene	1.1		2.500		44.0	20.6	151			
Sample ID	LCS-22699	SampT	ype: LC	S	Tes	tCode: El	PA Method	8082: PCB's			
Client ID:	LCSW	Batch	n ID: 22	699	F	RunNo: 3	0771				
Prep Date:	12/9/2015	Analysis D	ate: 12	2/11/2015	S	eqNo: 9	40026	Units: µg/L			
Analyte		Result	PQL		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: Decach	and the second	1.8		2.500		73.2	17.7	151			
Surr: Tetrach	nloro-m-xylene	1.1		2.500		43.2	20.6	151			
2	1512236-001DM		ype: MS			PA Method					
Client ID:	R.O. Reject	Batch	n ID: 22	699	RunNo: 30771						
Prep Date:	12/9/2015	Analysis D	ate: 12	2/11/2015	S	eqNo: 9	40884	Units: µg/L			
Analyte		Result	PQL	Store and Street Street	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			
	lorobiphenyl	2.1		2.500		84.0	17.7	151			
Surr: Tetrach	nloro-m-xylene	1.5		2.500		61.2	20.6	151			
Sample ID	1512236-001DM	1.1	ype: MS					8082: PCB's			
Client ID:	R.O. Reject	Reject Batch ID: 22699				RunNo: 3	0771				
Prep Date:	12/9/2015	Analysis D	Analysis Date: 12/11/2015			SeqNo: 940885					
Analyte		Result	PQL		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	
	nlorobiphenyl	1.9		2.500		77.6	17.7	151	0	0	
Surr: Tetrach	nloro-m-xylene	1.4		2.500		55.6	20.6	151	0	0	

Qualifiers:

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Sample Diluted Due to Matrix D

- Holding times for preparation or analysis exceeded Н
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- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit

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WO#:	1512236
	06-Jan-16

and the second	o Refining Co											
Project: Month	ly RO Reject											
Sample ID rb	SampT	ype: ME	BLK	TestCode: EPA Method 8260B: VOLATILES								
Client ID: PBW	Batch ID: A30709			F	RunNo: 30709							
Prep Date:	Analysis D	ate: 12	2/8/2015	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										
		2.0										
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
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