

GW – 028

**2015 Annual Discharge
Permit Report**

PART 8 OF 16

March 2016

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB-20149	SampType: MBLK		TestCode: EPA Method 8082: PCB's							
Client ID: PBW	Batch ID: 20149		RunNo: 27467							
Prep Date: 7/8/2015	Analysis Date: 7/14/2015		SeqNo: 824114		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.5		2.500		60.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.8	31.8	95.7			

Sample ID LCS-20149	SampType: LCS		TestCode: EPA Method 8082: PCB's							
Client ID: LCSW	Batch ID: 20149		RunNo: 27467							
Prep Date: 7/8/2015	Analysis Date: 7/14/2015		SeqNo: 824697		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.6	1.0	5.000	0	72.5	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	84.4	25.6	164			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		76.8	31.8	95.7			

Sample ID 1507157-001DMS	SampType: MS		TestCode: EPA Method 8082: PCB's							
Client ID: R.O. Reject	Batch ID: 20149		RunNo: 27467							
Prep Date: 7/8/2015	Analysis Date: 7/14/2015		SeqNo: 824698		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	62.2	14.5	105			
Aroclor 1260	3.7	1.0	5.000	0	74.5	21.4	125			
Surr: Decachlorobiphenyl	1.5		2.500		58.4	44.5	110			
Surr: Tetrachloro-m-xylene	1.4		2.500		56.8	31.8	95.7			

Sample ID 1507157-001DMSD	SampType: MSD		TestCode: EPA Method 8082: PCB's							
Client ID: R.O. Reject	Batch ID: 20149		RunNo: 27467							
Prep Date: 7/8/2015	Analysis Date: 7/14/2015		SeqNo: 824699		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.2	1.0	5.000	0	64.0	14.5	105	2.85	20	
Aroclor 1260	3.8	1.0	5.000	0	76.2	21.4	125	2.23	27.6	
Surr: Decachlorobiphenyl	1.5		2.500		60.8	44.5	110	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		58.4	31.8	95.7	0	0	

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821898	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1		SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW		Batch ID: R27395			RunNo: 27395				
Prep Date:			Analysis Date: 7/9/2015			SeqNo: 821898		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.5	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID	100ng lcs		SampType: LCS			TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW		Batch ID: R27395			RunNo: 27395				
Prep Date:			Analysis Date: 7/9/2015			SeqNo: 821903		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821903	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID	rb7	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821963		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821963	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType:	MBLK		TestCode:	EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID:	R27395		RunNo:	27395				
Prep Date:		Analysis Date:	7/9/2015		SeqNo:	821963		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821965		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	117	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.0	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20150		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs				
Client ID:	PBW		Batch ID:	20150		RunNo:	27333				
Prep Date:	7/8/2015		Analysis Date:	7/8/2015		SeqNo:	820082		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	2.0									
2-Methylnaphthalene	ND	2.0									
Benzo(a)pyrene	ND	0.070									
Surr: Benzo(e)pyrene	17		20.00		82.6	37.2	136				

Sample ID	LCS-20150		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 20150		RunNo: 27333					
Prep Date:	7/8/2015		Analysis Date: 7/8/2015		SeqNo: 820084		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.3	57.8	83.9			S
1-Methylnaphthalene	75	2.0	80.20	0	93.1	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	90.5	34.2	94.5			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.7	37.2	136			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20119		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	20119		RunNo:	27307				
Prep Date:	7/7/2015		Analysis Date:	7/7/2015		SeqNo:	818519		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-20119		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	20119		RunNo:	27307				
Prep Date:	7/7/2015		Analysis Date:	7/7/2015		SeqNo:	818520	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	18	2.5	20.00	0	92.4	64.4	135				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27657		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R27657		RunNo:	27657				
Prep Date:			Analysis Date:	7/13/2015		SeqNo:	830507		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R27657		SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	LCSW		Batch ID:	R27657		RunNo:	27657				
Prep Date:			Analysis Date:	7/13/2015		SeqNo:	830508		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.512		0.5000	0	102	90	110				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27657		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R27657		RunNo: 27657					
Prep Date:			Analysis Date: 7/16/2015		SeqNo: 830510		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.294	0.541								
Radium-226 ±	0.354	0.541								
Radium-228	0.097	0.682								
Radium-228 ±	0.303	0.682								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20140		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	20140		RunNo:	27385				
Prep Date:	7/7/2015		Analysis Date:	7/9/2015		SeqNo:	821530		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-20140		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 20140		RunNo: 27385					
Prep Date:	7/7/2015		Analysis Date: 7/9/2015		SeqNo: 821531		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1507157

RptNo: 1

Received by/date:

Logged By: Lindsay Mangin

7/3/2015 9:45:00 AM

Completed By: Lindsay Mangin

7/6/2015 8:30:01 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° C to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

6 or 12 (unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☒ X Standard ☐ Level 4 (Full Validation)

☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ X Standard ☐ Rush

Project Name:

Monthly R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: ☒ X Yes ☐ No

Sample Temperature: 25.00 2.1

Date Time Matrix Sample Request ID

7-1-15 2:50pm liquid B.O. Reject

7-1-15 2:50pm 1/6

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm

7-1-15 2:50pm Trip Blank

7-1-15 2:50pm

7-2-15 11am Relinquished by: Elizabeth Salsberry

Date: Time: Relinquished by:

Date: Time: Relinquished by:



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

8260B: WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate	Chloride	Fluoride	Nitrate/Nitrite	Total Dissolved Solids
X	X	X	X	X	X	X	X	X	X	X	X	X

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn
VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2-Trichloroethane; 1,1,2-Trichloroethylene; 1,1-Dichloroethane; 1,1-Dichloroethylene; 1,2-Dibromomethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride
SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

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



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575 748 3311
(Fax) 575 746 5451

Biannual RO Reject Sample Details Attachment



HOLLYFRONTIER

The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salisbury
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	7/1/2015 @ 2:43 pm
End Date and Time	7/1/2015 @ 2:54 pm

Sample Type	
Grab	<input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Pairs / Sample Intervals	One
--------------------------	-----

Physical Property	
Solid	<input type="checkbox"/>
Liquid	<input checked="" type="checkbox"/>
Sludge	<input type="checkbox"/>

Type of Sampler	Directly to sample jars
-----------------	-------------------------

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

Container	Size	Material	# of Containers	Neat (None)	HCl	HNO3	H2SO4	Preservatives				Other	Analysis and/or Method Requested
								NaOH	Na2S2O3	NaHSO4			
1	500ml	Plastic	2	X			X						pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3		X								8015 GRO
3	500ml	Plastic	1			X							6020 total metals, 7470 Hg
4	125ml	Plastic	1			X							6020 Dissolved Metals
5	500ml	Plastic	2					X					Cyanide
6	1L	Plastic	3				X						Radium 226/228
7	40ml	VOA	2		X								8260 see attached list
8	1L	Glass	1	X									8270 see attached list
9	1L	Glass	2	X									8062 PCBs
10	40ml	VOA	2	X									8015 DRO
11	40ml	VOA	2	X	X								Radium 226/228

Field Data (Weather, Observations, Etc):	7/1/2014 2:43 pm Temp. 91.4 °F, Humidity 29%, Wind Dir. East, Wind Speed 10.4 mph, Conditions Clear
Date and Time:	

Field Temp. 25.9 C Field pH 7.83

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

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



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

July 22, 2015

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

RE: Monthly RO Reject

OrderNo.: 1507158

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/3/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507158

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 7/1/2015 3:02:00 PM

Lab ID: 1507158-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	7/14/2015 1:51:42 PM	R27505
Lead	ND	0.00050		mg/L	1	7/14/2015 1:14:57 PM	R27505
Selenium	0.0082	0.0010		mg/L	1	7/14/2015 1:14:57 PM	R27505
Uranium	0.0055	0.00050		mg/L	1	7/14/2015 1:14:57 PM	R27505
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.05	0.202		pCi/L	1	7/16/2015	R27658
Radium-226 ±	0.561	0.202		pCi/L	1	7/16/2015	R27658
Radium-228	0.158	0.824		pCi/L	1	7/16/2015	R27658
Radium-228 ±	0.38	0.824		pCi/L	1	7/16/2015	R27658
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.4	2.0		mg/L	20	7/6/2015 10:42:35 PM	R27319
Chloride	130	10		mg/L	20	7/6/2015 10:42:35 PM	R27319
Sulfate	1500	50		mg/L	100	7/15/2015 4:21:52 PM	R27535
Nitrate+Nitrite as N	1.8	1.0		mg/L	5	7/6/2015 11:44:37 PM	R27319
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3100	20.0	*	mg/L	1	7/9/2015 2:45:00 PM	20140
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	7/13/2015	R27658
SM4500-H+B: PH							Analyst: JRR
pH	8.06	1.68	H	pH units	1	7/9/2015 10:09:14 PM	R27410
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Barium	0.063	0.0020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Boron	0.076	0.040		mg/L	1	7/7/2015 3:26:45 PM	R27323
Cadmium	ND	0.0020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Chromium	ND	0.0060		mg/L	1	7/7/2015 3:26:45 PM	R27323
Cobalt	ND	0.0060		mg/L	1	7/7/2015 3:26:45 PM	R27323
Copper	ND	0.0060		mg/L	1	7/7/2015 3:26:45 PM	R27323
Iron	ND	0.020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Manganese	0.010	0.0020		mg/L	1	7/7/2015 3:26:45 PM	R27323
Molybdenum	ND	0.0080		mg/L	1	7/7/2015 3:26:45 PM	R27323
Nickel	ND	0.010		mg/L	1	7/7/2015 3:26:45 PM	R27323
Silver	ND	0.0050		mg/L	1	7/7/2015 3:26:45 PM	R27323
Zinc	0.065	0.010		mg/L	1	7/7/2015 3:26:45 PM	R27323
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	7/8/2015 4:37:50 PM	20160

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507158

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 7/1/2015 3:02:00 PM

Lab ID: 1507158-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:30:06 PM	20171
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1221	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1232	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1242	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1248	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1254	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Aroclor 1260	ND	1.0		µg/L	1	7/14/2015 10:41:50 AM	20149
Surr: Decachlorobiphenyl	70.8	44.5-110		%REC	1	7/14/2015 10:41:50 AM	20149
Surr: Tetrachloro-m-xylene	58.8	31.8-95.7		%REC	1	7/14/2015 10:41:50 AM	20149
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/6/2015 8:59:32 PM	20109
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/6/2015 8:59:32 PM	20109
Surr: DNOP	100	76.5-150		%REC	1	7/6/2015 8:59:32 PM	20109
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/7/2015 5:26:23 PM	R27335
Surr: BFB	86.8	57.8-137		%REC	1	7/7/2015 5:26:23 PM	R27335
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	7/8/2015 3:41:21 PM	20150
1-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:41:21 PM	20150
2-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:41:21 PM	20150
Benzo(a)pyrene	ND	0.070		µg/L	1	7/8/2015 3:41:21 PM	20150
Surr: Benzo(e)pyrene	81.0	37.2-136		%REC	1	7/8/2015 3:41:21 PM	20150
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507158

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O.

Project: Monthly RO Reject

Collection Date: 7/1/2015 3:02:00 PM

Lab ID: 1507158-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES					Analyst: cadg		
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 5:46:58 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 5:46:58 AM	R27395
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
Surr: Dibromofluoromethane	88.7	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
Surr: Toluene-d8	105	70-130		%REC	1	7/10/2015 5:46:58 AM	R27395
TOTAL PHENOLICS BY SW-846 9067					Analyst: SCC		
Phenolics, Total Recoverable	ND	2.5		µg/L	1	7/7/2015	20119

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 26
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507158

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507158-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:43:48 PM	20171
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/8/2015 2:03:47 AM	R27335
Surr: BFB	86.3	57.8-137		%REC	1	7/8/2015 2:03:47 AM	R27335
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Naphthalene	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Acetone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromodichloromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromoform	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Bromomethane	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Butanone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Carbon disulfide	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chloroethane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Chloromethane	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
4-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
cis-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Dibromochloromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Dibromomethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 4 of 26
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit	
	O RSD is greater than RSDlimit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507158

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507158-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,3-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2,2-Dichloropropane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Hexachlorobutadiene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
2-Hexanone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Isopropylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
4-Isopropyltoluene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
4-Methyl-2-pentanone	ND	10		µg/L	1	7/10/2015 6:15:42 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
n-Butylbenzene	ND	3.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
n-Propylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
sec-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Styrene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
tert-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
trans-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Trichlorofluoromethane	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 6:15:42 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 6:15:42 AM	R27395
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395
Surr: Dibromofluoromethane	97.8	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395
Surr: Toluene-d8	104	70-130		%REC	1	7/10/2015 6:15:42 AM	R27395

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818884		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818885		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Barium	0.47	0.0020	0.5000	0	94.9	85	115			
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Copper	0.47	0.0060	0.5000	0	95.0	85	115			
Iron	0.47	0.020	0.5000	0	93.1	85	115			
Manganese	0.48	0.0020	0.5000	0	96.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.7	85	115			
Silver	0.099	0.0050	0.1000	0	99.3	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: R27323		RunNo: 27323							
Prep Date:	Analysis Date: 7/7/2015		SeqNo: 818886		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	147	50	150			
Barium	0.0022	0.0020	0.002000	0	112	50	150			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818886	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	ND	0.040	0.04000	0	89.4	50	150			
Cadmium	0.0020	0.0020	0.002000	0	101	50	150			
Chromium	ND	0.0060	0.006000	0	89.8	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	ND	0.0060	0.006000	0	99.2	50	150			
Iron	0.022	0.020	0.02000	0	112	50	150			
Manganese	ND	0.0020	0.002000	0	98.0	50	150			
Molybdenum	0.0092	0.0080	0.008000	0	115	50	150			
Nickel	ND	0.010	0.005000	0	92.4	50	150			
Silver	0.0055	0.0050	0.005000	0	109	50	150			
Zinc	ND	0.010	0.005000	0	90.4	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818887	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27323	RunNo:	27323					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	818888	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Boron	0.51	0.040	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R27323			RunNo: 27323				
Prep Date:	Analysis Date: 7/7/2015			SeqNo: 818888		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Copper	0.48	0.0060	0.5000	0	96.1	85	115			
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Manganese	0.49	0.0020	0.5000	0	97.6	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.1	85	115			
Silver	0.10	0.0050	0.1000	0	99.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.0	85	115			

Sample ID	LLCS	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: R27323			RunNo: 27323					
Prep Date:	Analysis Date: 7/7/2015			SeqNo: 818889		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	133	50	150			
Barium	0.0024	0.0020	0.002000	0	118	50	150			
Boron	ND	0.040	0.04000	0	89.1	50	150			
Cadmium	ND	0.0020	0.002000	0	89.0	50	150			
Chromium	ND	0.0060	0.006000	0	75.2	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Copper	0.0066	0.0060	0.006000	0	110	50	150			
Iron	0.021	0.020	0.02000	0	106	50	150			
Manganese	0.0020	0.0020	0.002000	0	103	50	150			
Molybdenum	0.011	0.0080	0.008000	0	140	50	150			
Nickel	ND	0.010	0.005000	0	104	50	150			
Silver	ND	0.0050	0.005000	0	72.0	50	150			
Zinc	ND	0.010	0.005000	0	88.8	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID: R27505			RunNo: 27505				
Prep Date:			Analysis Date: 7/14/2015			SeqNo: 825388		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			
Uranium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID: R27505			RunNo: 27505				
Prep Date:			Analysis Date: 7/14/2015			SeqNo: 825389		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID	LLLCS		SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID: R27505			RunNo: 27505				
Prep Date:			Analysis Date: 7/14/2015			SeqNo: 825390		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	94.0	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	ND	0.0010	0.001000	0	98.3	50	150			
Uranium	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID	LLLCS		SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID: R27505			RunNo: 27505				
Prep Date:			Analysis Date: 7/14/2015			SeqNo: 825391		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			
Uranium	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID	MB		SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	PBW		Batch ID: R27505			RunNo: 27505				
Prep Date:			Analysis Date: 7/14/2015			SeqNo: 825392		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825392	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825393	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20160	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	20160	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820623	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20160	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	20160	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820626	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27319	RunNo:	27319					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	818775	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27319	RunNo:	27319					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	818776	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.2	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27535	RunNo:	27535					
Prep Date:		Analysis Date:	7/15/2015	SeqNo:	826667	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	ND	0.50								
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Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27535	RunNo:	27535					
Prep Date:		Analysis Date:	7/15/2015	SeqNo:	826668	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	10	0.50	10.00	0	100	90	110			
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Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20171	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	20171	RunNo:	27393					
Prep Date:	7/9/2015	Analysis Date:	7/9/2015	SeqNo:	821853	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20171	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	20171	RunNo:	27393					
Prep Date:	7/9/2015	Analysis Date:	7/9/2015	SeqNo:	821854	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20109		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 20109		RunNo: 27291					
Prep Date:	7/6/2015		Analysis Date: 7/6/2015		SeqNo: 818285		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.88		1.000		88.5	76.5	150			

Sample ID	LCS-20109		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 20109		RunNo: 27291					
Prep Date:	7/6/2015		Analysis Date: 7/6/2015		SeqNo: 818286		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	1.0	5.000	0	81.8	60.1	156			
Surr: DNOP	0.49		0.5000		97.8	76.5	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819311	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		89.3	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819312	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.0	80	120			
Surr: BFB	19		20.00		94.6	57.8	137			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20149		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 20149		RunNo: 27467					
Prep Date:	7/8/2015		Analysis Date: 7/14/2015		SeqNo: 824114		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.5		2.500		60.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.8	31.8	95.7			

Sample ID	LCS-20149		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 20149		RunNo: 27467					
Prep Date:	7/8/2015		Analysis Date: 7/14/2015		SeqNo: 824697		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.6	1.0	5.000	0	72.5	9.01	142			
Aroclor 1260	4.2	1.0	5.000	0	84.4	25.6	164			
Surr: Decachlorobiphenyl	1.7		2.500		68.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		76.8	31.8	95.7			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821898	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821898	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.5	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821903	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821903	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	115	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID	rb7	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821963		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27395	RunNo:	27395					
Prep Date:		Analysis Date:	7/9/2015	SeqNo:	821963	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb7	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27395			RunNo: 27395					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 821963		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs2		SampType: LCS			TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW		Batch ID: R27395			RunNo: 27395				
Prep Date:	Analysis Date: 7/9/2015			SeqNo: 821965		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	117	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.0	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20150		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs				
Client ID:	PBW		Batch ID:	20150		RunNo:	27333				
Prep Date:	7/8/2015		Analysis Date:	7/8/2015		SeqNo:	820082		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	2.0									
2-Methylnaphthalene	ND	2.0									
Benzo(a)pyrene	ND	0.070									
Surr: Benzo(e)pyrene	17		20.00		82.6	37.2	136				

Sample ID	LCS-20150		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 20150		RunNo: 27333					
Prep Date:	7/8/2015		Analysis Date: 7/8/2015		SeqNo: 820084		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.3	57.8	83.9			S
1-Methylnaphthalene	75	2.0	80.20	0	93.1	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	90.5	34.2	94.5			
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.7	37.2	136			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20119	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	20119	RunNo:	27307					
Prep Date:	7/7/2015	Analysis Date:	7/7/2015	SeqNo:	818519	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-20119	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	20119	RunNo:	27307					
Prep Date:	7/7/2015	Analysis Date:	7/7/2015	SeqNo:	818520	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	92.4	64.4	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27658		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R27658		RunNo:	27658				
Prep Date:			Analysis Date:	7/13/2015		SeqNo:	830512		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R27658		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R27658		RunNo: 27658					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 830513		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.512		0.5000	0	102	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R27658		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed				
Client ID:	PBW		Batch ID:	R27658		RunNo:	27658				
Prep Date:			Analysis Date:	7/16/2015		SeqNo:	830515		Units:	pCi/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Radium-226	0.294	0.541									
Radium-226 ±	0.354	0.541									
Radium-228	0.523	0.758									
Radium-228 ±	0.388	0.758									

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507158

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20140	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	20140	RunNo:	27385					
Prep Date:	7/7/2015	Analysis Date:	7/9/2015	SeqNo:	821530	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20140	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	20140	RunNo:	27385					
Prep Date:	7/7/2015	Analysis Date:	7/9/2015	SeqNo:	821531	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1507158

RcptNo: 1

Received by/date:

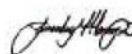


07/03/15

Logged By:

Lindsay Mangin

7/3/2015 9:45:00 AM



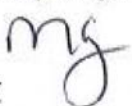
Completed By:

Lindsay Mangin

7/6/2015 8:34:53 AM



Reviewed By:



07/06/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° C to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

801

(<2 or >12 unless noted)

Adjusted?

Checked by:



Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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



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

Biannual RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	7/1/2015 @ 3:02 pm
End Date and Time	7/1/2015 @ 3:11 pm

Sample Type
Grab <input checked="" type="checkbox"/>
Time Weighted Composite <input type="checkbox"/>
Flow Weighted Composite <input type="checkbox"/>

Parts / Sample Intervals One

Physical Property
Solid <input type="checkbox"/>
Liquid <input checked="" type="checkbox"/>
Sludge <input type="checkbox"/>

Type of Sampler Directly to sample jars

Outfall / Sample Location: ☐ North Field R.O. Reject Discharge ☒ South Field R.O. Reject Discharge

Container	Size	Material	# of Containers	Preservatives							Analysis and/or Method Requested	
				NaCl (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4		Other
1	500ml	Plastic	2	X			X					pH, Cl, F, SO4, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc): 7/1/2014 3:02 pm Temp: 93.2 °F, Humidity: 26%, Wind Dir: SE, Wind Speed: 9.2 mph, Conditions: Clear

Date and Time:

Storage Method

Ice ☒

Refrigerated ☐

Other ☐

Field Temp: 29.1 °C Field pH: 7.65

Shipping Media

Ice ☒

Other ☐



September 15, 2015

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

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

RE: WQA-OCD-CO-2015-002
Monthly Report – August 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's September 2015 monthly report, for the period of August 1-31, under the Order.

Specifically, this report covers the August 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire August reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from August 1 through August 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from August 1 through August 31.

Navajo has calculated a penalty of \$3,100 for August 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 31 days in August. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on August 3, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo has conducted a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels. Navajo submitted the associated background groundwater concentration report to OCD on September 2, 2015.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015.

Navajo has completed the public notice requirements set forth in 20.6.2.3108B New Mexico Administrative Code (NMAC) regarding public notice of the permit modification request. Mailings were sent to adjacent landowners within a 1/3 mile radius of the property, signs have been posted near the discharge location (Richey Avenue) and at the Refinery offices, and the notice has been published in the *Artesia Daily Press*. Navajo submitted proof of completion of the public notice, including an affidavit of mailing and the list of property owners, proof of publication, and an affidavit of posting, to the OCD on September 3, 2015.

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

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

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

Attachment 1
Daily Discharge Flow Rates

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

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
8/1/2015	129	132	261	8,949	62	2,131	11,080
8/2/2015	132	107	239	8,194	63	2,160	10,354
8/3/2015	136	126	262	8,983	63	2,166	11,149
8/4/2015	134	127	261	8,949	62	2,134	11,083
8/5/2015	135	129	264	9,051	60	2,061	11,112
8/6/2015	136	126	262	8,983	59	2,033	11,016
8/7/2015	138	121	259	8,880	56	1,904	10,784
8/8/2015	137	133	270	9,257	45	1,539	10,796
8/9/2015	134	126	260	8,914	48	1,641	10,555
8/10/2015	137	133	270	9,257	57	1,961	11,218
8/11/2015	135	126	261	8,949	58	2,001	10,950
8/12/2015	132	121	253	8,674	49	1,680	10,354
8/13/2015	143	128	271	9,291	56	1,906	11,197
8/14/2015	135	120	255	8,743	58	1,993	10,736
8/15/2015	143	131	274	9,394	48	1,659	11,053
8/16/2015	134	130	264	9,051	44	1,509	10,560
8/17/2015	131	130	261	8,949	47	1,601	10,550
8/18/2015	129	124	253	8,674	57	1,960	10,634
8/19/2015	134	129	263	9,017	56	1,928	10,945
8/20/2015	134	129	263	9,017	56	1,935	10,952
8/21/2015	134	121	255	8,743	56	1,928	10,671
8/22/2015	132	131	263	9,017	57	1,948	10,965
8/23/2015	135	129	264	9,051	57	1,966	11,017
8/24/2015	136	131	267	9,154	58	1,979	11,133
8/25/2015	131	124	255	8,743	57	1,939	10,682
8/26/2015	130	128	258	8,846	56	1,924	10,770
8/27/2015	128	118	246	8,434	57	1,941	10,375
8/28/2015	129	128	257	8,811	52	1,775	10,586
8/29/2015	118	127	245	8,400	47	1,624	10,024
8/30/2015	132	129	261	8,949	48	1,648	10,597
8/31/2015	131	125	256	8,777	55	1,885	10,662

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - August 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	31	\$3,100
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$3,100

Attachment 3
Analytical Lab Report



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

August 26, 2015

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

RE: Monthly Temporary R.O. Reject

OrderNo.: 1508063

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 8/3/2015 9:30:00 AM

Lab ID: 1508063-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	8/12/2015 8:39:59 PM	D28151
Copper	0.0037	0.0010		mg/L	1	8/19/2015 1:30:00 PM	B28323
Lead	ND	0.00050		mg/L	1	8/12/2015 8:19:49 PM	D28151
Selenium	0.0086	0.0050		mg/L	5	8/12/2015 8:39:59 PM	D28151
Uranium	0.0070	0.00050		mg/L	1	8/12/2015 8:19:49 PM	D28151
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.27	0.620		pCi/L	1	8/18/2015	R28452
Radium-226 ±	0.644	0.620		pCi/L	1	8/18/2015	R28452
Radium-228	0.571	0.712		pCi/L	1	8/18/2015	R28452
Radium-228 ±	0.375	0.712		pCi/L	1	8/18/2015	R28452
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.6	0.10		mg/L	1	8/4/2015 2:39:23 PM	R27968
Chloride	320	10		mg/L	20	8/4/2015 3:16:37 PM	R27968
Sulfate	1900	50		mg/L	100	8/14/2015 3:34:40 AM	R28192
Nitrate+Nitrite as N	1.7	1.0		mg/L	5	8/14/2015 4:24:18 AM	R28192
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4000	20.0	*	mg/L	1	8/6/2015 5:55:00 PM	20614
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	8/12/2015	R28452
SM4500-H+B: PH							Analyst: JRR
pH	8.04	1.68	H	pH units	1	8/6/2015 8:07:28 PM	R28029
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Barium	0.076	0.0020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Boron	0.093	0.040		mg/L	1	8/5/2015 9:48:22 PM	R27986
Cadmium	ND	0.0020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Chromium	ND	0.0060		mg/L	1	8/5/2015 9:48:22 PM	R27986
Cobalt	ND	0.0060		mg/L	1	8/5/2015 9:48:22 PM	R27986
Iron	ND	0.020		mg/L	1	8/7/2015 2:05:37 PM	R28044
Manganese	0.0094	0.0020		mg/L	1	8/5/2015 9:48:22 PM	R27986
Molybdenum	0.0082	0.0080		mg/L	1	8/5/2015 9:48:22 PM	R27986
Nickel	ND	0.010		mg/L	1	8/5/2015 9:48:22 PM	R27986
Silver	ND	0.0050		mg/L	1	8/5/2015 9:48:22 PM	R27986
Zinc	0.053	0.010		mg/L	1	8/6/2015 3:42:35 PM	C28013
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/7/2015 2:01:54 PM	20665

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 8/3/2015 9:30:00 AM

Lab ID: 1508063-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/4/2015 8:14:29 PM	R27954
Surr: BFB	99.9	70-130		%REC	1	8/4/2015 8:14:29 PM	R27954
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	8/7/2015 12:08:21 PM	20627
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1221	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1232	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1242	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1248	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1254	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Aroclor 1260	ND	1.0		µg/L	1	8/10/2015 9:50:46 AM	20661
Surr: Decachlorobiphenyl	92.0	44.5-110		%REC	1	8/10/2015 9:50:46 AM	20661
Surr: Tetrachloro-m-xylene	113	31.8-95.7	S	%REC	1	8/10/2015 9:50:46 AM	20661
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/5/2015 10:39:12 PM	20617
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/5/2015 10:39:12 PM	20617
Surr: DNOP	98.5	72-136		%REC	1	8/5/2015 10:39:12 PM	20617
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	8/10/2015 9:22:01 AM	20677
1-Methylnaphthalene	ND	2.0		µg/L	1	8/10/2015 9:22:01 AM	20677
2-Methylnaphthalene	ND	2.0		µg/L	1	8/10/2015 9:22:01 AM	20677
Benzo(a)pyrene	ND	0.070		µg/L	1	8/10/2015 9:22:01 AM	20677
Surr: Benzo(e)pyrene	48.7	37.2-136		%REC	1	8/10/2015 9:22:01 AM	20677
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Toluene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Ethylbenzene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Carbon Tetrachloride	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Chloroform	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1-Dichloroethane	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1-Dichloroethene	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Methylene Chloride	ND	3.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Temporary R.O. Reject

Project: Monthly Temporary R.O. Reject

Collection Date: 8/3/2015 9:30:00 AM

Lab ID: 1508063-001

Matrix: AQUEOUS

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Vinyl chloride	ND	1.0		µg/L	1	8/4/2015 5:33:38 PM	R27952
Xylenes, Total	ND	1.5		µg/L	1	8/4/2015 5:33:38 PM	R27952
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
Surr: Dibromofluoromethane	98.4	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
Surr: Toluene-d8	90.6	70-130		%REC	1	8/4/2015 5:33:38 PM	R27952
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	8/6/2015	20629

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1508063-002

Matrix: TRIP BLANK

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/4/2015 8:42:06 PM	R27954
Surr: BFB	99.0	70-130		%REC	1	8/4/2015 8:42:06 PM	R27954
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Toluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Ethylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Naphthalene	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1-Methylnaphthalene	ND	4.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Methylnaphthalene	ND	4.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Acetone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromodichloromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromoform	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Bromomethane	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Butanone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Carbon disulfide	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Carbon Tetrachloride	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chloroethane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chloroform	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Chloromethane	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Chlorotoluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
4-Chlorotoluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
cis-1,2-DCE	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Dibromochloromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Dibromomethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1-Dichloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1-Dichloroethene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508063

Date Reported: 8/26/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly Temporary R.O. Reject

Collection Date:

Lab ID: 1508063-002

Matrix: TRIP BLANK

Received Date: 8/4/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2-Dichloropropane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,3-Dichloropropane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2,2-Dichloropropane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1-Dichloropropene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Hexachlorobutadiene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
2-Hexanone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Isopropylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
4-Isopropyltoluene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
4-Methyl-2-pentanone	ND	10		µg/L	1	8/4/2015 6:02:20 PM	R27952
Methylene Chloride	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
n-Butylbenzene	ND	3.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
n-Propylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
sec-Butylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Styrene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
tert-Butylbenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
trans-1,2-DCE	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Trichlorofluoromethane	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Vinyl chloride	ND	1.0		µg/L	1	8/4/2015 6:02:20 PM	R27952
Xylenes, Total	ND	1.5		µg/L	1	8/4/2015 6:02:20 PM	R27952
Surr: 1,2-Dichloroethane-d4	97.6	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952
Surr: 4-Bromofluorobenzene	98.2	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952
Surr: Dibromofluoromethane	95.9	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952
Surr: Toluene-d8	89.0	70-130		%REC	1	8/4/2015 6:02:20 PM	R27952

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842241	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842242	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	104	85	115			
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.6	85	115			
Manganese	0.48	0.0020	0.5000	0	95.6	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	99.7	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842243	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	115	50	150			
Barium	ND	0.0020	0.002000	0	85.0	50	150			
Boron	ND	0.040	0.04000	0	97.3	50	150			
Cadmium	ND	0.0020	0.002000	0	95.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Cobalt	ND	0.0060	0.006000	0	99.3	50	150			
Manganese	0.0026	0.0020	0.002000	0	131	50	150			
Molybdenum	0.0087	0.0080	0.008000	0	109	50	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842243	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010	0.005000	0	93.4	50	150			
Silver	ND	0.0050	0.005000	0	93.8	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842244	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842245	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	103	85	115			
Barium	0.50	0.0020	0.5000	0	99.0	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115			
Chromium	0.49	0.0060	0.5000	0	98.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.6	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Molybdenum	0.51	0.0080	0.5000	0	103	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27986	RunNo:	27986					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	842246	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID LLLCS	SampType: LCSLL	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: BatchQC	Batch ID: R27986	RunNo: 27986								
Prep Date:	Analysis Date: 8/5/2015	SeqNo: 842246			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	112	50	150			
Barium	ND	0.0020	0.002000	0	98.5	50	150			
Boron	ND	0.040	0.04000	0	99.7	50	150			
Cadmium	ND	0.0020	0.002000	0	77.5	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	99.8	50	150			
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Molybdenum	0.0093	0.0080	0.008000	0	116	50	150			
Nickel	ND	0.010	0.005000	0	97.4	50	150			
Silver	ND	0.0050	0.005000	0	95.4	50	150			

Sample ID MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: C28013	RunNo: 28013								
Prep Date:	Analysis Date: 8/6/2015	SeqNo: 843253			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: LCSW	Batch ID: C28013	RunNo: 28013								
Prep Date:	Analysis Date: 8/6/2015	SeqNo: 843254			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.50	0.010	0.5000	0	101	85	115			

Sample ID LLLCS	SampType: LCSLL	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: BatchQC	Batch ID: C28013	RunNo: 28013								
Prep Date:	Analysis Date: 8/6/2015	SeqNo: 843255			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010	0.005000	0	128	50	150			

Sample ID MB	SampType: MBLK	TestCode: EPA Method 200.7: Dissolved Metals								
Client ID: PBW	Batch ID: R28044	RunNo: 28044								
Prep Date:	Analysis Date: 8/7/2015	SeqNo: 844435			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844436	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.51	0.020	0.5000	0	102	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844437	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.026	0.020	0.02000	0	131	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844438	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844439	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	99.0	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R28044	RunNo:	28044					
Prep Date:		Analysis Date:	8/7/2015	SeqNo:	844440	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.020	0.020	0.02000	0	101	50	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID: D28151			RunNo: 28151					
Prep Date:		Analysis Date: 8/12/2015			SeqNo: 848117		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			
Lead	0.012	0.00050	0.01250	0	99.4	85	115			
Selenium	0.025	0.0010	0.02500	0	99.7	85	115			
Uranium	0.012	0.00050	0.01250	0	98.6	85	115			

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: D28151			RunNo: 28151					
Prep Date:		Analysis Date: 8/12/2015			SeqNo: 848119		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	104	50	150			
Lead	0.00052	0.00050	0.0005000	0	105	50	150			
Selenium	0.0010	0.0010	0.001000	0	105	50	150			
Uranium	0.00053	0.00050	0.0005000	0	105	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	D28151	RunNo:	28151					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	848122	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID: B28323			RunNo: 28323					
Prep Date:		Analysis Date: 8/19/2015			SeqNo: 855090		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	95.4	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	B28323	RunNo:	28323					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855092	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010	0.001000	0	91.5	50	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	B28323	RunNo:	28323					
Prep Date:		Analysis Date:	8/19/2015	SeqNo:	855094	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-20665	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	20665	RunNo:	28038					
Prep Date:	8/7/2015	Analysis Date:	8/7/2015	SeqNo:	844199	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20665	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	20665	RunNo:	28038					
Prep Date:	8/7/2015	Analysis Date:	8/7/2015	SeqNo:	844200	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.8	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	1508063-001EMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	Temporary R.O. Rej	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841509	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.9	0.10	0.5000	3.578	64.8	75.3	111			S

Sample ID	1508063-001EMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	Temporary R.O. Rej	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841510	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.8	0.10	0.5000	3.578	47.8	75.3	111	2.20	20	S

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	841566	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27968	RunNo:	27968					
Prep Date:		Analysis Date:	8/5/2015	SeqNo:	841567	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R28192	RunNo:	28192					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849498	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28192	RunNo:	28192					
Prep Date:		Analysis Date:	8/13/2015	SeqNo:	849499	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.0	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-20627	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844775	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20627	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	20627	RunNo:	28045					
Prep Date:	8/6/2015	Analysis Date:	8/7/2015	SeqNo:	844776	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	110	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	LCS-20617	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW	Batch ID:	20617	RunNo:	27957					
Prep Date:	8/5/2015	Analysis Date:	8/5/2015	SeqNo:	842448	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.9	1.0	5.000	0	118	60.1	156			
Surr: DNOP	0.52		0.5000		104	72	136			

Sample ID	1508063-001KMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	Temporary R.O. Rej	Batch ID:	20617	RunNo:	27957					
Prep Date:	8/5/2015	Analysis Date:	8/5/2015	SeqNo:	842451	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	116	75.9	164			
Surr: DNOP	0.51		0.5000		103	72	136			

Sample ID	1508063-001KMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	Temporary R.O. Rej	Batch ID:	20617	RunNo:	27957					
Prep Date:	8/5/2015	Analysis Date:	8/5/2015	SeqNo:	842452	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	75.9	164	3.46	22.1	
Surr: DNOP	0.51		0.5000		101	72	136	0	0	

Sample ID	MB-20617	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID:	20617	RunNo:	27957					
Prep Date:	8/5/2015	Analysis Date:	8/5/2015	SeqNo:	842468	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.95		1.000		95.5	72	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-20661		SampType:	MBLK		TestCode:	EPA Method 8082: PCB's			
Client ID:	PBW		Batch ID:	20661		RunNo:	28049			
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845110		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		73.6	44.5	110			
Surr: Tetrachloro-m-xylene	2.3		2.500		90.4	31.8	95.7			

Sample ID	LCS-20661		SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW		Batch ID:	20661		RunNo:	28049			
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845133		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	5.9	1.0	5.000	0	117	9.01	142			
Aroclor 1260	6.0	1.0	5.000	0	119	25.6	164			
Surr: Decachlorobiphenyl	2.2		2.500		89.2	44.5	110			
Surr: Tetrachloro-m-xylene	2.7		2.500		107	31.8	95.7			S

Sample ID	1508063-001DMS		SampType:	MS		TestCode:	EPA Method 8082: PCB's			
Client ID:	Temporary R.O. Rej		Batch ID:	20661		RunNo:	28049			
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845724		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.7	1.0	5.000	0	94.4	14.5	105			
Aroclor 1260	5.7	1.0	5.000	0	113	21.4	125			
Surr: Decachlorobiphenyl	2.4		2.500		96.4	44.5	110			
Surr: Tetrachloro-m-xylene	2.8		2.500		112	31.8	95.7			S

Sample ID	1508063-001DMSD		SampType:	MSD		TestCode:	EPA Method 8082: PCB's			
Client ID:	Temporary R.O. Rej		Batch ID:	20661		RunNo:	28049			
Prep Date:	8/7/2015		Analysis Date:	8/10/2015		SeqNo:	845725		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	4.3	1.0	5.000	0	86.6	14.5	105	8.66	20	
Aroclor 1260	5.2	1.0	5.000	0	104	21.4	125	8.17	27.6	
Surr: Decachlorobiphenyl	2.2		2.500		88.8	44.5	110	0	0	
Surr: Tetrachloro-m-xylene	2.5		2.500		100	31.8	95.7	0	0	S

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27954	RunNo:	27954					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841101	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.9		10.00		98.6	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R27954	RunNo:	27954					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841102	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		99.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.5		10.00		95.2	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R27952	RunNo:	27952					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841117	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	19	1.0	20.00	0	93.8	70	130			
1,1-Dichloroethene	25	1.0	20.00	0	127	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	111	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID	VSB deli	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R27952	RunNo:	27952					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	841118	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	VSBL deli	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R27952		RunNo: 27952						
Prep Date:		Analysis Date: 8/4/2015		SeqNo: 841118		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	VS8 deli	SampType:	MBLK		TestCode:	EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID:	R27952		RunNo:	27952				
Prep Date:		Analysis Date:	8/4/2015		SeqNo:	841118		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		96.3	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20677		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs				
Client ID:	PBW		Batch ID:	20677		RunNo:	28051				
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	844835		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	2.0									
2-Methylnaphthalene	ND	2.0									
Benzo(a)pyrene	ND	0.070									
Surr: Benzo(e)pyrene	14		20.00		68.8	37.2	136				

Sample ID	LCS-20677		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 20677		RunNo: 28051					
Prep Date:	8/10/2015		Analysis Date: 8/10/2015		SeqNo: 845107		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	71	2.0	80.00	0	89.4	57.8	83.9			S
1-Methylnaphthalene	74	2.0	80.20	0	91.8	43.5	88.5			S
2-Methylnaphthalene	72	2.0	80.00	0	89.4	34.2	94.5			
Benzo(a)pyrene	0.44	0.070	0.5020	0	87.6	56.3	98.6			
Surr: Benzo(e)pyrene	14		20.00		70.8	37.2	136			

Sample ID	1508063-001DMS		SampType:	MS		TestCode:	EPA Method 8310: PAHs				
Client ID:	Temporary R.O. Rej		Batch ID:	20677		RunNo:	28051				
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	845141		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	63	2.0	80.00	0	78.8	21.6	109				
1-Methylnaphthalene	64	2.0	80.20	0	79.7	15.8	102				
2-Methylnaphthalene	62	2.0	80.00	0	78.0	11.4	99				
Benzo(a)pyrene	0.40	0.070	0.5020	0	79.7	25	123				
Surr: Benzo(e)pyrene	13		20.00		67.3	37.2	136				

Sample ID	1508063-001DMSD		SampType:	MSD		TestCode:	EPA Method 8310: PAHs				
Client ID:	Temporary R.O. Rej		Batch ID:	20677		RunNo:	28051				
Prep Date:	8/10/2015		Analysis Date:	8/10/2015		SeqNo:	845142		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Naphthalene	54	2.0	80.00	0	67.5	21.6	109	15.5	20		
1-Methylnaphthalene	55	2.0	80.20	0	68.8	15.8	102	14.7	20		
2-Methylnaphthalene	54	2.0	80.00	0	67.6	11.4	99	14.3	20		
Benzo(a)pyrene	0.34	0.070	0.5020	0	67.7	25	123	16.2	20		
Surr: Benzo(e)pyrene	12		20.00		58.0	37.2	136	0			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-20629	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842690	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-20629	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSSW	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842691	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	21	2.5	20.00	0	104	64.4	135			

Sample ID	LCSD-20629	SampType:	LCSD	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSS02	Batch ID:	20629	RunNo:	27992					
Prep Date:	8/6/2015	Analysis Date:	8/6/2015	SeqNo:	842692	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	18	2.5	20.00	0	91.6	64.4	135	12.7	21.4	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	MB-R28452	SampType:	MBLK	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	PBW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	859841	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	LCS-R28452	SampType:	LCS	TestCode:	EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/12/2015	SeqNo:	859842	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.521		0.5000	0	104	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID: R27954			RunNo: 27954					
Prep Date:		Analysis Date: 8/4/2015			SeqNo: 841369		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		101	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R27954		RunNo: 27954							
Prep Date:	Analysis Date: 8/4/2015		SeqNo: 841371		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	80.6	122			
Surr: BFB	9.9		10.00		99.4	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	MB-R28452	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/18/2015	SeqNo:	859845	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	ND	0.551								
Radium-226 ±	0.342	0.551								
Radium-228	0.014	0.860								
Radium-228 ±	0.371	0.860								

Sample ID	MB-R28452	SampType:	MBLK	TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW	Batch ID:	R28452	RunNo:	28452					
Prep Date:		Analysis Date:	8/18/2015	SeqNo:	859847	Units:	pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.556	0.599								
Radium-226 ±	0.441	0.599								
Radium-228	0.314	0.882								
Radium-228 ±	0.412	0.882								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508063

26-Aug-15

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

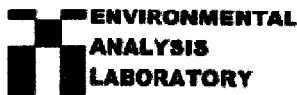
Sample ID	MB-20614	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	20614	RunNo:	28014					
Prep Date:	8/5/2015	Analysis Date:	8/6/2015	SeqNo:	843310	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20614	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	20614	RunNo:	28014					
Prep Date:	8/5/2015	Analysis Date:	8/6/2015	SeqNo:	843311	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

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

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



4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3875 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name **NAVAJO REFINING CO**

Work Order Number: **1508063**

RcptNo: **1**

Received by/date:

CS

08/04/15

Logged By **Ashley Gallegos**

8/4/2015 9:13:00 AM

[Signature]

Completed By **Ashley Gallegos**

8/4/2015 9:27:44 AM

[Signature]

Reviewed By:

CS

08/04/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: **6**
(<2 or <12 unless noted)
- Adjusted? ☐
- Checked by: *[Signature]*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			