UICI - 8 - 4

WDW-4 FOT



March 31, 2020

Mr. Carl Chavez, CHMM
NM Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505-5472

Certified Mail/Return Receipt

7018 0040 0000 9065 6664

RE: 2019 Annuai Class I Non-Hazardous Waste Injection Wells (WDW-1, WDW-2, WDW-3, WDW-4) Report from HollyFrontier Navajo Refining LLC

Dear Mr. Chavez,

Enclosed, please find the annual injection well report for fluids that HollyFrontier Navajo Refining LLC (permittee) injected into wells WDW-1, WDW-2, WDW-3 and WDW-4 during 2019 as required under permits UlCl-008-1, UlCl-008-2, UlCl-008-3 and UlCl-008-4, Permit Condition 20.6.2.3107 NMAC Annual Report, for all four wells. The API numbers for the wells are: (WDW-1) 30-015-27592, (WDW-2) 30-015-20894, (WDW-3) 30-015-26575, (WDW-4) 30-015-44677

This report is signed and certified in accordance with 20.6.2.3107 NMAC. If there are any questions, please contact me at Scott.Denton@holiyfrontier.com or 575-748-5487 or Randy.Dade@hollyfrontier.com.

Respectfully,

Scott M. Denton

Environmental Manager

HollyFrontier Navajo Refining LLC

Summary of WDW-1, WDW-2, WDW-3 and WDW-4 Operations for 2019

The wells themselves did not have any remedial or major work performed during 2019. The wells did have Pressure Fall Off Tests in 2019. WDW-1 (30-015-27592) FOT was done in June 2019, WDW-2 (30-015-20894) FOT was done in July 2019. WDW-3 (30-015-26575) FOT was done in August 2019 and WDW-4 did not have a FOT in 2019 as per approval of the OCD due to the well being new. FOT results will be uploaded to the OCD website. No MIT's were done due to WAM's being in place and casing being cemented to surface.

No Deviations from Normal Operations: No Leaks or Spills in 2019

Water Sales: No Water Sales made in 2019

Monthly Injection/Disposal Volume with Cumulative Totals

Flows, pressures and volume reports have been submitted to OCD as monthly C-115's and also Quarterly Injection Reports are submitted. These are resubmitted as Attachment A.

Maximum and Average Injection Pressures

Maximum and average injection pressures are resubmitted as Attachment B.

Copies of Fall Off Tests

Fall Off Tests were performed on three wells in 2019. All FOT results with pressure charts and AOC's of area wells will be mailed to the OCD in April 2020 when finalized and approved and will be uploaded to the OCD website.

An Area of Review (AOR) Annual Update Summary

Area of Review data was noted in the 2019 Fall Off Tests and that information will be uploaded to the OCD in April 2020. Wells with in One Mile Area of Review are resubmitted as Attachment B. There are no new wells in the AOR.

Summary of all major facility activities or events which occurred in 2019

There were 3 major facility events in 2019. In Attachment B

3/26/2019: Tank 106 release; Copy of C-141 Attached

5/28/2019: Cooling Tower Blowdown Line to City Sample Point; Copy of C-141 Attached 9/3/2019: Cooling Tower Blowdown Line to City Sample Point; Copy of C-141 Attached

Quarterly Chemical Analyses with QA/QC Data Summary Tables

Quarterly chemical analyses, including QA/QC and summary tables for 2019 are Attachment C. The four wells share a common transmission pipe from the Refinery wastewater treatment facility to the wellhead areas. The single sample point for all four wells is taken off the main pipeline.

ATTACHMENT A

Monthly Injection Volume with Cumulative Totals

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos, Aztec, NM 84710

State of New Mexico

OIL CONSERVATION DIVISION Energy, Minerals & Natural Resources Department

OPERATOR'S MONTHLY REPORT 1220 South Saint Francis Drive Santa Fe, NM 87505

Form C-115 First Page Revised January 22, 2004 Instruction on Reverse Side **Amended Report**

2 Operator NAVAJO REFINERY CO.								(7)	3 OGRID:	15694			1/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	9, ARTE	SIA, NI	1. 88210										6 Page 1 of 4		
		INJECTION	NOIT		PRODUCTION	TION				DISPOSITI	ON OF OIL	DISPOSITION OF OIL, GAS, AND WATER) WATER		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R AP! No.	c 9 O Volume E F		10 0 Pressure D	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D D E	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 0 0 H 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN															
30-015-20894 WDW - 1	D 263	263,589 75,463	1,272 W 1,262 W												
78890 ILLINOIS CAMP; MORROW NORTH	I														
30-015-26575 WDW - 3	D 92	92,469	1,177 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	D	202560	28 W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

District I

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos, Aztec, NM 84710

State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION

1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR 'S MONTHLY REPORT

Form C-115 First Page
Revised January 22, 2004
Instruction on Reverse Side

hand at end of month Oil on 0 0 6 Page 1 of 4 Transporter DISPOSITION OF OIL, GAS, AND WATER Ogrid 2/2019 20 Volume (Bbls/mcf) Oil on hand beginning of month 15694 18 Gas BTU or Oil API Gravity Disposition 3 OGRID: Point of 4 Prod-Days peon 15 Produced 14 MCF Gas **PRODUCTION** Barrels of produced water 2 Oil/conden-Barrels of produced sate 1,270 W 1,252 W 20 W 1,116 W Ω 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 Pressure INJECTION 10 188,160 61,440 66,240 228480 Volume o ОООШ 78890 ILLINOIS CAMP; MORROW NORTH Ω ۵ NAVAJO REFINERY CO. POOL NO. AND NAME 96918 NAVAJO PERMO-PENN Property No. and Name Well No. & U-L-S-T-R **96101 SWD-DEVONIAN** 30-015-44677 WDW-4 30-015-26575 WDW - 3 30-015-27592 WDW - 1 30-015-20894 WDW - 2 API No. 2 Operator 5 Address:

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

575-746-5281 Phone Number 6 Page 2 of 0 Date Lewis.Dade@hollyfrontier.com 4 Month/Year E-Mail Address ENVIR. SPEC. Printed Name & Title 3 OGRID L. R. DADE Signature 2 Operator

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210

District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico

OIL CONSERVATION DIVISION Energy, Minerals & Natural Resources Department

Instruction on Reverse Side

Amended Report

Form C-115 First Page Revised January 22, 2004

1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT

			ب ل ا ج				
			23 Oil on hand at end of month				
	4		2000 ш 4				
3/2019	6 Page 1 of 4	D WATER	21 Transporter Ogrid				
		., GAS, AN	20 Volume (Bbls/mcf)				
		DISPOSITION OF OIL, GAS, AND WATER	19 Oil on hand at beginning of month				
15694		DISPOSIT	18 Gas BTU or Oil API Gravity				
3 OGRID:			17 Point of Disposition				
			а m u o c 4				
			15 Days Prod- uced				
		TION.	14 MCF Gas Produced				
		PRODUCTION	13 Barrels of water produced				
			12 Barrels of Oil/conden- sate produced				
	٥		C 4	>>	≥	W 08	
	NM. 8821	INJECTION	10 Pressure	1,184 W 1,157 W	1,064 W		
	ARTESIA,	Î.N.	9 Volume	132,857	59,520	279531	
	59, /	Т	∞ ∩ O O ⊞ ←	۵۵	-E -0	۵	
2 Operator NAVAJO REFINERY CO.	5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210		Z POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	96918 NAVAJO PERMO-PENN 30-015-27592 WDW - 1 30-015-20894 WDW - 2	78890 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3	96101 SWD-DEVONIAN 30-015-44677 WDW-4	
				52 72 74	1- 0)	W (3	

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature	L. R. DADE	ENVIR. SPEC.	Lewis.Dade@hollyfrontier.com	0	575-746-5281
	Printed	d Name & Title	E-Mail Address	Date	Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	f 4

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

1000 Rio Brazos, Aztec, NM 84710

Energy, Minerals & Natural Resources Department State of New Mexico

OIL CONSERVATION DIVISION

OPERATOR'S MONTHLY REPORT 1220 South Saint Francis Drive Santa Fe, NM 87505

Instruction on Reverse Side 1 Amended Report Form C-115 First Page Revised January 22, 2004

2 Operator NAVAJO REFINERY CO.									3 OGRID:	15694		-	4/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	59, ART	ESIA, NI	W. 88210										6 Page 1 of 4		
		INJEC	INJECTION		PRODUCTION	TION				DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI	WATER		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	8 С С С С С С	9 Volume	11 10 0 Pressure D	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	2 2 3 8 9 9	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	2 O O D m 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 30-015-27592 WDW - 1 30-015-20894 WDW - 2	0 0	138,857 48,343	1,240 W 1,140 W												
78890 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3		52,457	1,047 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4		240686													
									_						
	_														

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

		П
575-746-5281	Phone Number	of 4
0	Date	6 Page 2 of 4
Lewis.Dade@hollyfrontier.com	E-Mail Address	4 Month/Year
		Q
ENVIR. SPEC.	Printed Name & Title	3 OGRID
L. R. DADE		
	ø	
	Signatur	Operator

1625 North French, Hobbs, NM 88241 District |

811 S. First St., Artesia, NM 88210 District II

1000 Rio Brazos, Aztec, NM 84710

District III

OIL CONSERVATION DIVISION 1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT State of New Mexico Energy, Minerals & Natural Resources Department

Form C-115 First Page Revised January 22, 2004 Instruction on Reverse Side Amended Report

2 Operator NAVAJO REFINERY CO.									3 OGRID:	15694			5/2019		
Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	9, ARTES	IA, NM.	88210										6 Page 1 of 4	4	
	_	INJECTION	NO		PRODUCTION	TION				DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI) WATER		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	C 9 D Volume		11 10 O Pressure D	12 Barrels of Oil/conden- safe produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C D B	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 0 0 m 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 30-015-27592 WDW - 1 30-015-20894 WDW - 2	D 148,	148,800	1,283 W												
78890 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3		64,834	1,064 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	D 223	223200	75 W												

Signature	L. R. DADE ENV	IR. SPEC.	Lewis.Dade@hollyfrontier.com	0	575-746-5281
	Printed Nam	ne & Title	E-Mail Address	Date	Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	

1625 North French, Hobbs, NM 88241

811 S. First St., Artesia, NM 88210 District III District II

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION OPERATOR'S MONTHLY REPORT 1220 South Saint Francis Drive Santa Fe, NM 87505

Form C-115 First Page Revised January 22, 2004

2 Operator NAVAJO REFINERY CO.									3 OGRID:	15694			6/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	59, A	RTESIA, N	M. 88210										6 Page 1 of 4	4	
	_	INJE	INJECTION		PRODUCTION	TION				DISPOSITI	DISPOSITION OF OIL,	, GAS, AND WATER	WATER		
Z POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	∞ ∩ O O □ −	9 Volume	110 C C TO O Pressure D 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	2 0 0 0 m г	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	2 2 2 2 4 1 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 30-015-27592 WDW - 1	٥	134.743	1.223 W												
30-015-20894 WDW - 2	Ω	62,743	1,247 W												
78890 ILLINOIS CAMP; MORROW NORTH	E_														
30-015-26575 WDW - 3	Ω	55,543	1,031 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	۵	274629	<u></u>												= =

i	L. R. DADE	ENVIR. SPEC.	Lewis.Dade@hollyfrontier.com	0	575-746-5281
Signature	Prin	ted Name & Title	E-Mail Address	Date	Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	f 4

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT

Form C-115 First Page
Revised January 22, 2004
Instruction on Reverse Side

2 Operator NAVAJO REFINERY CO.								(1)	3 OGRID:	15694			7/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	9, ARTE	SIA, NR	1. 88210										6 Page 1 of 4		
		INJECTION	TION		PRODUCTION	HON				DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI	WATER .		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	0 C C C C C C C C C C C C C C C C C C C	9 Volume F	11 C C O Pressure D E	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C D D B	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 0 0 H 4	23 Oil on hand at end of month
-PENN															
30-015-27592 WDW - 1 30-015-20894 WDW - 2	 	139,234 60,583	1,219 W 1,224 W												
78890 ILLINOIS CAMP; MORROW NORTH	Ŧ														
30-015-26575 WDW - 3	, , , , , , , , , , , , , , , , , , ,	73,337	1,045 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	D 27	272091	163 W												

575-746-5281 Phone Number

Date

Lewis.Dade@hollyfrontier.com

ENVIR. SPEC. Printed Name & Title

L. R. DADE

Signature

2 Operator

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

E-Mail Address

6 Page 2 of 4

4 Month/Year

3 OGRID

District I

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT

Form C-115 First Page
Revised January 22, 2004
Instruction on Reverse Side

•	2 Operator NAVAJO REFINERY CO.										3 OGRID:	15694			8/2019		
~,	5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	59, AI	TESIA, N	M. 88210											6 Page 1 of 4	4	
		_	INJE	INJECTION	\vdash		PRODUCTION	NOIT:				DISPOSITI	DISPOSITION OF OIL,	, GAS, ANI	GAS, AND WATER		
	POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	® N O U Ⅲ ←	9 Volume	10 Pressure	2 0 0 E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	8 0 0 0 0 0 0	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	2 2 2 2 3 4 4	23 Oil on hand at end of month
57 C7 C4	96918 NAVAJO PERMO-PENN 30-015-27592 WDW - 1 30-015-20894 WDW - 2	Q	129,669 54,206	1,099 W 1,160 W	≥ ≥												
14 (7	78890 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3		81,840	1,062 W	>												
GF (C)	96101 SWD-DEVONIAN 30-015-44677 WDW-4	۵	312480	115 W	3												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature	L. R. DADE Printed	ENVIR. SPEC. Name & Title	Lewis.Dade@hollyfrontier.com E-Mail Address	0 Date	575-746-5281 Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	4

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT

Form C-115 First Page
Revised January 22, 2004
Instruction on Reverse Side

2 Operator NAVAJO REFINERY CO.										3 OGRID:	15694			9/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	9, ARTI	ESIA, NA	A. 88210											6 Page 1 of 4		
		INJECTION	NOIT:	H		PRODUCTION	NOIL				DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANE	WATER		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	8 0 0 T T V O	9 Volume	10 Pressure	2 C C C C C C C C C C C C C C C C C C C	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	ы В посте	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	2 o o o m 4	23 Oil on hand at end of month
-PENN																
30-015-27592 WDW - 1 30-015-20894 WDW - 2	O O	126,514 48,343	1,133 W 1,137 W	≥ ≥												
78890 ILLINOIS CAMP; MORROW NORTH	, ,															
30-015-26575 WDW - 3	<u>.</u>	51,429	863 W	>												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	· · ·	246857	101 W													
	_															

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature Printed Name &	ENVIK. SPEC. Lewis.Da	Lewis.Dade@hollyfrontier.com E-Mail Address	0 Date	5/5-746-5281 Phone Number
2 Operator 3 OC	3 OGRID	4 Month/Year	6 Page 2 of 4	

District I

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

1000 Rio Brazos, Aztec, NM 84710

Energy, Minerals & Natural Resources Department State of New Mexico

OIL CONSERVATION DIVISION

OPERATOR'S MONTHLY REPORT 1220 South Saint Francis Drive Santa Fe, NM 87505

Revised January 22, 2004 Instruction on Reverse Side **Amended Report** Form C-115 First Page

hand at end of Oil on month ន 0 0 6 Page 1 of 4 Transporter DISPOSITION OF OIL, GAS, AND WATER Ogrid 10/2019 (Bbls/mcf) Volume 20 Oil on hand beginning of month 15694 18 Gas BTU or Oil API Gravity Disposition 3 OGRID: Point of 4 Prod-15 Days nced Produced 14 MCF Gas **PRODUCTION** Barrels of produced Oil/conden-Barrels of produced 1,117 W 1,142 W 100 W 1,033 W 0 о ш г 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 Pressure INJECTION 9 125,417 46,766 69,086 247,646 Volume 00 Ш ۵ ۵ Ω 78890 ILLINOIS CAMP; MORROW NORTH Ω NAVAJO REFINERY CO. POOL NO. AND NAME 96918 NAVAJO PERMO-PENN Property No. and Name Well No. & U-L-S-T-R 30-015-26575 WDW - 3 **96101 SWD-DEVONIAN** 30-015-44677 WDW-4 30-015-27592 WDW - 1 30-015-20894 WDW - 2 API No. 5 Address: 2 Operator

Signature	L. K. DADE Printed	ENVIK. SPEC.	Lewis.Dade@hollyfrontier.com E-Mail Address	Date	5/5-746-5281 Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	4

District I

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

Energy, Minerals & Natural Resources Department State of New Mexico

Revised January 22, 2004 Instruction on Reverse Side

Form C-115 First Page

Amended Report

OIL CONSERVATION DIVISION

1220 South Saint Francis Drive Santa Fe, NM 87505

hand at end of Oil on month 0 6 Page 1 of 4 Transporter DISPOSITION OF OIL, GAS, AND WATER Ogrid 11/2019 20 Volume (Bbls/mcf) Oil on hand beginning of month 15694 18 Gas BTU or Oil API Gravity Disposition 3 OGRID: Point of 4 OPERATOR'S MONTHLY REPORT Prod-15 Days peon Produced MCF Gas PRODUCTION Barrels of produced Oil/conden-Barrels of produced sate 1,246 W 1,227 W 100 W 1,052 W 0 0 H 2 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 Pressure INJECTION 10 134,743 45,257 49,371 231,429 Volume о о п ш ۵ ۵ 78890 ILLINOIS CAMP; MORROW NORTH Ω Ω NAVAJO REFINERY CO. POOL NO. AND NAME 96918 NAVAJO PERMO-PENN Property No. and Name Well No. & U-L-S-T-R 1000 Rio Brazos, Aztec, NM 84710 **96101 SWD-DEVONIAN** 30-015-44677 WDW-4 30-015-26575 WDW - 3 30-015-27592 WDW - 1 30-015-20894 WDW - 2 API No. 5 Address: 2 Operator

Signature	L. K. DADE EN Printed Na	IVIK. SPEC. Lewis.L	Lewis.Dade@hollyfronter.com E-Mail Address	Date	5/5-/46-5281 Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	4

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Artesia, NM 88210 District III

1000 Rio Brazos, Aztec, NM 84710

Form C-115 First Page Revised January 22, 2004 Instruction on Reverse Side

Amended Report

_

OIL CONSERVATION DIVISION State of New Mexico Energy, Minerals & Natural Resources Department

OPERATOR'S MONTHLY REPORT 1220 South Saint Francis Drive Santa Fe, NM 87505

5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 INJECTION INJECTION C	SIA, NM. 88210					2							
8 C O O D D Volu	IFCTION										6 Page 1 of 4		
® U О Д Ш	1		PRODUCTION	NOI			_	DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	GAS, AND	WATER		
1	10 C 10 O Pressure D 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- D	16 C O D D 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C C C 4 F F F F F F F F F F F F F F F F	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN													
30-015-27592 WDW - 1 D 123,291 30-015-20894 WDW - 2 D 38,263	1,117 W 1,207 W												
78890 ILLINOIS CAMP; MORROW NORTH													
30-015-26575 WDW - 3 D 53,143	13 1,097 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4 D 268,903	109 W												
						\dashv						\dashv	

Signature	L. K. DADE E Printed N	Name & Title	Lewis.Dade@hollyfrontier.com E-Mail Address	Date	5/5-/46-5281 Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	4

ATTACHMENT B

Maximum and Average Injection Pressures

	A	В	U	۵	ш	ш	9	H	-	_	¥	٦	Σ	z	0	۵	a
- m			2019 FIR:	ST QUAF	TER MO	2019 FIRST QUARTER MONTHLY INJEC	JECTION	PRESSU	IRES, RA	TES, AN	TION PRESSURES, RATES, AND VOLUMES	ES					
4 7																	
9 2						Average	Maxi	mum Minimum					TOTAL				
∞		Average	Average		Maximum Minimum	n Annular	Annular	Annular	Average	Average Maximum Minimum	Minimum		CUMULATIVE				
6		Pressure	Flow	Flow	Flow	Pressure	Pressure Pressure Pressure	Pressure	Volume	Volume	Volume	Volume	Volume				
의		(bisd)	(mdg)	(mdb)	(mdg)	Av (psig)	Mx (psig) Mn (psig)	Mn (psig)	(pdq)	(pdq)	(pdq)	(barrels)	(barrels)			Q1 Disposal bbls	Max Flow gpm
7															WDW-1	584,606	301
12	30-015-275	30-015-27592 WDW-1									Pre	Previous Quar	43,261,695		WDW-2	190,046	94
13	13 Jan-19	1,272	248	301	80	929	734	219	263,589	319,920	85,029	263,589	43,525,284		WDW-3	218,229	144
14	14 Feb-19	1,270	196	293	26	364	929	170	188,160	281,280	103,097	188,160	43,713,444		WDW-4	710,571	729
15	Mar-19	1,184	125	150	106	456	701	323	132,857	159,429	112,663	132,857	43,846,301				
16	Monthly Avg	1,242	190								TOTAL	584,606					
17																	
18	30-015-208	30-015-20894 WDW-2									Pre	Previous Quar	27,836,942				
19	Jan-19	1,262	7	94	80	390	543	230	75,463	606'66	8,503	75,463	27,912,405				
20	20 Feb-19	1,252	64	8	59	410	288	284	61,440	77,760	27,840	61,440	27,973,845				
21	Mar-19		20	77	26	432	629	304	53,143	81,840	27,634	53,143	28,026,988				
22	22 Monthly Avg		62								TOTAL	190,046					
23																	
24	30-015-265	30-015-26575 WDW-3									Pre	Previous Quar	19,438,780				
25	Jan-19	1,177	87	144	o	741	938	298	92,469	153,051	0	92,469	19,531,249				
26	Feb-19	1,116	69	109	0	700	930	561	66,240	104,640	0	66,240	19,597,489				
27	Mar-19	1,064	99	98	25	629	839	265	59,520	91,406	26,571	59,520	19,657,009				
28	28 Monthly Avg	1,119	71								TOTAL	218,229					
53																	
30	30-015-446	30-015-44677 WDW-4									Pre	Previous Quar	0				
31	Jan-19	58	422	683	178	152	227	107	202,560	327,840	72,960	202,560	202,560				
32	Feb-19	20	238	729	82	159	226	111	228,480	699,840	78,720	228,480	431,040				
33	33 Mar-19	80	263	351	192	167	253	96	279,531	373,063	204,069	279,531	710,571				
34	Monthly Avg		308								TOTAL	710,571					
35	35																
36												Total BBLS	Beginning Volume	Ending Volume	ē.		
37											WDW1	584,606	43,261,695	43,846,301			
38											WDW2	190,046	27,836,942	28,026,988			
39											WDW3	218,229	19,438,780	19,657,009			
8											WDW4	710,571	0	710,571			
14												1,703,452	90,537,417	92,240,869			

	٨	8	U	۵	ш	ш	9	Ξ	-	_	¥	_	Σ	z	0	۵	ō
			2040 0100	STO CINC	OTTO	> Intro		000	0	4 0 0 0 0		0					
v 4			ZOIS SECOND GOARIER MONINET INSE	ON CANA		ON I		N PKES	אל איט	A EO, A	CION PRESSOCIES, RAIES, AND VOLUMES	0					
n o i																	
- 80		Average	Average	Maximun	Maximum Minimum	Average n Annular	Maxi	mum Minimum	Average	Average Maximum Minimum	Minimum		CUMULATIVE				
6		Pressure	Flow	Flow	Flow			Pressure	Volume	Volume	Volume	Volume	Volume				
9		(bsig)	(mdg)	(mdg)	(mdb)	Av (psig)	Mx (psig) Mn (psig)	Mn (psig)	(pdq)	(pdq)	(pdq)	(barrels)	(barrels)			Q2 Disposal bbls	Max Flow gpm
1															WDW-1	422,400	148
12	30-015-27592 WDW-1	592 WDW-1									Pre	Previous Quar	43,846,301		WDW-2	173,795	11
13	13 Apr-19	1,240	135	148	107	240	726	404	138,857	152,229	110,057	138,857	43,985,158		WDW-3	172,834	113
4	14 May-19	1,283	140	149	123	287	729	459	148,800	158,366	130,731	148,800	44,133,958		WDW-4	738,515	307
15	Jun-19	1,223	131	146	100	397	518	193	134,743	150,171	102,857	134,743	44,268,701				
16	Monthly Avg	1,249	135								TOTAL	422,400					
17																	
8	18 30-015-20894 WDW-2	394 WDW-2									Pre	Previous Quar	28,026,988				
19	19 Apr-19	1,141	47	9/	0	510	199	282	48,343	78,171	0	48,343	28,075,331				
20	May-19	1,215	69	78	8	463	629	309	62,709	82,903	36,137	62,709	28,138,040				
17	Jun-19	1,247	61	78	40	372	418	300	62,743	80,229	41,143	62,743	28,200,783				
N	22 Monthly Avg	1,201	99								TOTAL	173,795					
ლ																	
4	24 30-015-26575 WDW-3	575 WDW-3									Pre	Previous Quar	19,657,009				
5	Apr-19	1,047	51	117	6	653	750	549	52,457	120,343	9,257	52,457	19,709,466				
9	May-19	1,064	61	111	10	541	652	387	64,834	117,977	10,629	64,834	19,774,300				
27	27 Jun-19	1,031	54	111	-	397	515	300	55,543	114,171	1,029	55,543	19,829,843				
ထူ	28 Monthly Avg		55								TOTAL	172,834					
9																	
စ္က	30 30-015-44677 WDW-4	377 WDW-4									Pre	Previous Quar	710,571				
듄	Apr-19	02	234	309	146	184	243	126	240,686	317,829	150,171	240,686	951,257				
32	May-19		210	317	154	167	239	101	223,200	336,926	163,680	223,200	1,174,457				
23	Jun-19	98	267	596	190	172	254	100	274,629	304,457	195,429	274,629	1,449,086				
72	Monthly Avg		237								TOTAL	738,515					
55	35																
98												Total BBLS 6	Beginning Volume	Ending Volume	a		
2											WDW1	422,400	43,846,301	44,268,701			
စ္က											WDW2	173,795	28,026,988	28,200,783			
68											WDW3	172,834	19,657,009	19,829,843			
0											WDW4	738,515	710,571	1,449,086			
41												1,507,544	92,240,869				

١,	∢	ш	U	۵	ш	ш	ŋ	ı	-	-	¥	1	Σ	z	0	۵	a
- m			2019 THIF	SD QUAR	TER MO	2019 THIRD QUARTER MONTHLY INJECTION PRESSURES. RATES. AND VOLUMES	JECTION	PRESSU	IRES. RA	TES. AN	D VOLUA	1ES					
4 2				M													
9 1						Average	2	Minim					TOTAL				
		Average	Average	Maximum	Maximum Minimum	-	Anr	Annular	Average	Average Maximum Minimum	Minimum		CUMULATIVE				
6		Pressure	Flow	Flow	Flow		_		Volume	Volume	Volume	Volume	Volume				
10		(bsig)	(mdb)	(md6)	(mdg)	Av (psig)	Mx (psig)	Mn (psig)	(pdq)	(pdq)	(pdq)	(barrels)	(barrels)			Q3 Disposal bbls	Max Flow gpm
Ξ															WDW-1	395,417	147
12 3	30-015-27592 WDW-1	92 WDW-1									Pre	Previous Quar	44,268,701		WDW-2	163,132	70
S.	13 Jul-19	1,219	131	147	113	438	909	271	139,234	156,240	120,103	139,234	44,407,935		WDW-3	206,606	109
4	Aug-19	1,099	122	151	92	273	487	104	129,669	160,491	100,971	129,669	44,537,604		WDW-4	831,428	329
R)	15 Sep-19	1,133	123	14	105	397	518	193	126,514	148,114	108,000	126,514	44,664,118				
9	16 Monthly Avg	1,150	125								TOTAL	395,417					
17																	
8	18 30-015-20894 WDW-2	34 WDW-2									Pre	Previous Quar	28,200,783				
19 U	Jul-19	1,224	22	69	0	397	501	325	60,583	73,337	0	60,583	28,261,366				
A	4ug-19	1,160	51	77	23	631	1,040	360	54,206	81,840	24,446	54,206	28,315,572				
(J)	21 Sep-19	1,137	47	83	32	372	418	300	48,343	64,800	32,914	48,343	28,363,915				
2	Nonthly Avg	1,174	52								TOTAL	163,132					
m																	
4 3	24 30-015-26575 WDW-3	75 WDW-3									Pre	Previous Quar	19,829,843				
-5	Jul-19	1,045	69	106	40	383	999	250	73,337	112,663	42,514	73,337	19,903,180				
Α	4ug-19	1,062	77	109	0	394	593	218	81,840	115,851	0	81,840	19,985,020				
2	Sep-19	993	50	112	22	397	515	300	51,429	115,200	5,143	51,429	20,036,449				
22	28 Monthly Avg	1,033	65								TOTAL	206,606					
0																	
<u></u>	30-015-44677 WDW-4	77 WDW-4									Pr	Previous Quar	1,449,086				
급	Jul-19	102	256	317	109	163	237	6	272,091	336,926	115,851	272,091	1,721,177				
<u>√</u>	4ug-19	115	294	344	164	178	248	102	312,480	365,623	174,309	312,480	2,033,657				
S	Sep-19	101	240	326	177	172	254	100	246,857	335,314	182,057	246,857	2,280,514				
4 5	Monthly Avg	106	263								TOTAL	831,428					
N)	35																
ıo												10	Beginning Volume	Ending Volume	4:		
_											WDW1	395,417	44,268,701	44,664,118			
											WDW2	163,132	28,200,783	28,363,915			
0)											WDW3	206,606	19,829,843	20,036,449			
0											WDW4	831,428	1,449,086	2,280,514			
-												1,596,583	93,748,413				

I	A	В	U	۵	ш	ч	G	Ŧ	-	-	¥	7	Σ	z	0	А	a
-			2040	THE CHIEF	OTTO	N III			C	L		C L					
w 4			2018 FOURTH GOARTER MONTHLY INJE	A DO	Z E E E	ONIHLY		N PRESS	SUKES, F	(AIES, A	CION PRESSURES, RAIES, AND VOLUMES	ME C					
- LS																	
w																	
N						_	Maxi	mum Minimum					TOTAL				
ω		Average	Average	Maximum	Maximum Minimum		Annular	Annular	Average	Maximum Minimum	Minimum		CUMULATIVE				
6		Pressure	Flow	Flow	Flow	Pressure	Pressure Pressure	Pressure	Volume	Volume	Volume	Volume	Volume				
9		(bsig)	(mdg)	(mdg)	(mdg)	Av (psig)		Mx (psig) Mn (psig)	(pdq)	(pdq)	(pdq)	(barrels)	(barrels)			Q4 Disposal bbls	Max Flow gpm
1															WDW-1	383,451	143
12		30-015-27592 WDW-1									Pre	Previous Quar	44,664,118		WDW-2	130,286	70
13	Oct-19	1,117	118	135	109	472	638	342	125,417	143,486	115,851	125,417	44,789,535		WDW-3	171,600	102
4	Nov-19	1,246	131	147	118	538	200	352	134,743	151,200	121,371	134,743	44,924,278		WDW-4	747,978	312
15	Dec-19	1,117	116	146	102	535	794	338	123,291	155,177	108,411	123,291	45,047,569				
16	Monthly Avg	1,160	122								TOTAL	383,451					
9		30-015-20894 WDW-2									Pre	Previous Quar	28,363,915				
19	Oct-19	1,142	44	28	24	510	992	342	46,766	82,903	25,509	46,766	28,410,681				
20	Nov-19	1,227	44	83	4	581	805	380	45,257	85,371	4,114	45,257	28,455,938				
21	Dec-19	1,207	36	48	23	511	693	388	38,263	51,017	24,446	38,263	28,494,201				
22	Monthly Avg	1,192	41								TOTAL	130,286					
m																	
72	30-015-26575 WDW-3	575 WDW-3									Pre	Previous Quar	20,036,449				
25	Oct-19	1,033	64	97	ဖ	356	615	210	980'69	103,097	6,377	980'69	20,105,535				
26	Nov-19	1,052	48	118	2	230	693	416	49,371	121,371	2,057	49,371	20,154,906				
27	Dec-19	1,097	20	92	თ	929	713	416	53,143	97,783	9,566	53,143	20,208,049				
	Monthly Avg	1,061	54								TOTAL	171,600					
20																	
윘	30-015-44677	377 WDW-4									Pre	Previous Quar	2,280,514				
-	Oct-19	100	233	318	100	126	177	92	247,646	337,989	106,286	247,646	2,528,160				
32	Nov-19	100	225	294	135	177	248	119	231,429	302,400	138,857	231,429	2,759,589				
00	33 Dec-19	109	253	323	182	162	246	105	268,903	343,303	193,440	268,903	3,028,492				
47	34 Monthly Avg		237								TOTAL	747,978					
121																	
ωĪ												S	Beginning Volume	Ending Volume	a		
N											WDW1	383,451	44,664,118	45,047,569			
00											WDW2	130,286	28,363,915	28,494,201			
0											WDW3	171,600	20,036,449	20,208,049			
0											WDW4	747,978	2,280,514	3,028,492			

District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Pic Brayes Road, Artes, NM 8741 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

			Res	ponsi	ble Part	ty
Responsible Party: HollyFrontier Navajo Refining LLC				OGRID:	15694	
Contact Name: Randy Dade					Contact Te	elephone: 575-746-5281
Contact ema	il: Lewis.Da	de@hollyfrontier.	com		Incident #	(assigned by OCD)
Contact mail	ing address:	501 E Main Stree	t, Artesia, NM 8	8210		
			Location	n of R	elease S	Source
Latitude: 32	.50'38.92"		(NAD 83 in a	decimal de	Longitude: grees to 5 deci	: 104.23'32.79"
Site Name:	Tank 106				Site Type	: Bermed Storage Tank Area
Date Releas	e Discovered	d: 03/26/2019			API# (if ap	pplicable)
Unit Letter	Section	Township Range County		nty		
	9	17S	26E	EDDY		
	Mater	Federal 7	Nature an	ıd Vol	lume of	• · · · · · · · · · · · · · · · · · · ·
Crude Oi	l	Volume Release	d (bbls)		-	Volume Recovered (bbls)
SOUR WA	TER/OIL	Volume Release	d (bbls): < 50 bbl	S		Volume Recovered (bbls): > 40 bblS
Is the concentration of dissolved chloride produced water >10,000 mg/l?		hloride i	in the	☐ Yes ☐ No		
Condensate Volume Released (bbls)				Volume Recovered (bbls)		
☐ Natural G		Volume Release	d (Mcf)			Volume Recovered (Mcf)
Other (describe) Volume/Weight Released (provide units)		e units)		Volume/Weight Recovered (provide units)		
Cause of Rel started to be	ease: Releas brought dow	e was caused due n, vacuum truck p	to local guage and icked up free liqu	l transmi id. Impa	tter malfun ected soil w	nction. When release was discovered, level in tank was was picked up and put in Hard Top RollOffs.

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by	Release was more than 25 barrels
19.15.29.7(A) NMAC?	
☐ Yes ☐ No	
If YES, was immediate no Notice was given by Ran	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? dy Dade. Carl Chaves was notified by phone on 3/26/2019 at 1:00 pm.
	Initial Response
The responsible	e party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.
☐ The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	we been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described	d above have not been undertaken, explain why:
Per 10 15 20 8 R (4) NM	AC the responsible party may commence remediation immediately after discovery of a release. If remediation
has begun, please attach	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred
within a lined containmen	nt area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I harahy partify that the infa	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and
regulations all operators are	required to report and/or file certain release notifications and perform corrective actions for releases which may endanger
public health or the environr	nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have
failed to adequately investig	ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In
addition, OCD acceptance of and/or regulations.	f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
and of regulations.	
Printed Name: _Lewis R	DadeTitle: Environmental Specialist
Signature: Scurs	$\mathcal{D}\Lambda$ /
Signature: Scurs	K.lcole Date: 3/27/2019
email: Lewis Dade@holls	yfrontier.com Telephone: 575-746-5281
	,
OCD Only	
OCD OILL	
Received by:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	(ft bgs)		
Did this release impact groundwater or surface water?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No		
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No		
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No		
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No		
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No		
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No		
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No		
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No		
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☑ No		
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.			
Characterization Report Checklist: Each of the following items must be included in the report.			
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data Data table of soil contaminant concentration data Depth to water determination			
Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release Boring or excavation logs			
☐ Photographs including date and GIS information ☐ Topographic/Aerial maps ☐ Laboratory data including chain of custody			

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

regulations all operators are required to report and/or public health or the environment. The acceptance of failed to adequately investigate and remediate contar	ue and complete to the best of my knowledge and understand that pursuant to OCD rules and file certain release notifications and perform corrective actions for releases which may endanger a C-141 report by the OCD does not relieve the operator of liability should their operations have ination that pose a threat to groundwater, surface water, human health or the environment. In relieve the operator of responsibility for compliance with any other federal, state, or local laws	
Printed Name: Lewis.Dade_	Title: Environmental Specialist	
Signature: Rewords de	Date: 3/27/2019	
email: Lewis.Dade@hollyfrontier.com	Telephone: 575-746-5281	
OCD Only		
Received by:	Date:	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must h	e included in the plan.
 □ Detailed description of proposed remediation technique □ Scaled sitemap with GPS coordinates showing delineation poin □ Estimated volume of material to be remediated □ Closure criteria is to Table 1 specifications subject to 19.15.29. □ Proposed schedule for remediation (note if remediation plan tin 	12(C)(4) NMAC
Deferral Requests Only: Each of the following items must be con-	nfirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around p deconstruction.	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human healt	h, the environment, or groundwater.
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name:	Title:
Signature:	Date:
email:	Telephone:
OCD Only	
Received by:	Date:
Approved Approved with Attached Conditions of	Approval Denied Deferral Approved
Signature:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: I	Each of the following items must be included in the closure report.
A scaled site and sampling diagram as	described in 19.15.29.11 NMAC
Photographs of the remediated site prior must be notified 2 days prior to liner inspec	or to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office ction)
Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
Description of remediation activities	
and regulations all operators are required to r may endanger public health or the environme should their operations have failed to adequa human health or the environment. In addition compliance with any other federal, state, or leavestore, reclaim, and re-vegetate the impacted	
email:	Telephone:
OCD Only	
Received by:	Date:
and remediate contamination that poses a th	eve the responsible party of liability should their operations have failed to adequately investigate areat to groundwater, surface water, human health, or the environment nor does not relieve the neer federal, state, or local laws and/or regulations.
Closure Approved by:	Date:
Printed Name:	Title:

Dade, Lewis (Randy)

From: Sent:

Subject:

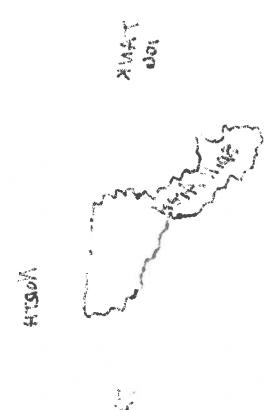
Dade, Lewis (Randy)

Tank 106 Release 3/26/2019 Dade, Lewis (Randy) Thursday, March 28, 2019 9:17 AM



delete this email. Unless expressly stated, this message is not a digital or electronic signature or a commitment to a binding agreement. This e-mail may contain information that is privileged and confilential. If you received this message in error, please advise the sender immediately and





District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party						
			OGRID: 1	•		
			Contact Te	elephone: 575-746-5281		
Contact email: Lewis.Dade@hollyfrontier.com			1	Incident#	(assigned by OCD)	
Contact mailing address: 501 E. Main St. Artesia, NM 88210						
Location of Release Source						
Latitude 32.8520059 N Longitude 104.39487032W (NAD 83 in decimal degrees to 5 decimal places)						
Site Name:	Navajo Refii	nery			Site Type	: Petroleum Refinery
Date Release Discovered: 5/28/2019			API# (if applicable)			
Unit Letter	Section	Township	Range		County	
	9	178	28E	EDDY		
Surface Owner: State Federal Tribal Private (Name: HollyFrontier Navajo Refining LLC) Nature and Volume of Release						
Material(s) Released (Select all that apply and attach calculations or specific Crude Oil Volume Released (bbls)		ons or specifi	Volume Recovered (bbls)			
☐ Produced	Produced Water Volume Released (bbls)			Volume Recovered (bbls)		
		Is the concentration of dissolved chloride in the produced water >10,000 mg/l?		1 the	Yes No	
Condensa			Volume Recovered (bbls)			
Natural G	as	Volume Released (Mcf)			Volume Recovered (Mcf)	
Other (describe): Non-hazardous cooling tower blowdown to city POTW Volume/Weight Released (provide units): Greater than 25 bbls			Volume/Weight Recovered (provide units): None			

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Cause of Release: Plastic	Tubing line to sample station broke releasing water on ground. Water was shut off and tubing line repaired.
Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release? Release volume is estimated to be greater than 25 bbls.
⊠ Yes □ No	
	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? dy Dade to OCD Santa Fe, Carl Chavez at 3:40 pm by phone.
	Initial Response
The responsibl	e party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped. s been secured to protect human health and the environment.
Released materials ha	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.
_	ecoverable materials have been removed and managed appropriately.
f all the actions describe ormal traffic area. Soil i hance to recover any fre	d above have <u>not</u> been undertaken, explain why: Released material was in an area inside of plant but out of s compacted dirt and caliche with no chance of impacting any waterways or community entities. There was no e liquids.
as begun, please attach	IAC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
has begun, please attach within a lined containment hereby certify that the infoculations all operators are sublic health or the environmentalled to adequately investig ddition, OCD acceptance of	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred
has begun, please attach within a lined containment hereby certify that the information all operators are sublic health or the environs ailed to adequately investiguidation, OCD acceptance of and/or regulations. Printed Name: Lewis R.	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws DadeTitle: Environmental Specialist
has begun, please attach within a lined containment hereby certify that the infoculations all operators are public health or the environmental to adequately investiguidation, OCD acceptance ound/or regulations.	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation. Immation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws Dade

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

OCD Only		
Received by:	Date:	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	(ft bgs)		
Did this release impact groundwater or surface water?	☐ Yes ☑ No		
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No		
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No		
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No		
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No		
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No		
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No		
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No		
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No		
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No		
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ⊠ No		
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.			
Characterization Report Checklist: Each of the following items must be included in the report.			
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data Data table of soil contaminant concentration data Depth to water determination Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release Boring or excavation logs Photographs including date and GIS information Topographic/Aerial maps Laboratory data including chain of custody			

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Printed Name: Lewis R. Dade	Title: Environmental Specialist	
Signature:	Date: 5/30/2019	
email: Lewis.Dade@hollyfrontier.com	Telephone: _575-746-5281	
OCD Only		
Received by:	Date:	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.			
 □ Detailed description of proposed remediation technique □ Scaled sitemap with GPS coordinates showing delineation points □ Estimated volume of material to be remediated □ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC □ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) 			
Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.			
Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.			
Extents of contamination must be fully delineated.			
Contamination does not cause an imminent risk to human health, the environment, or groundwater.			
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name: _Lewis R. Dade Title: Environmental Specialist			
email: Lewis, Dade@hollyfrontier.com Telephone:			
OCD Only			
Received by: Date:			
Approved Approved with Attached Conditions of Approval Denied Deferral Approved			
Signature: Date:			

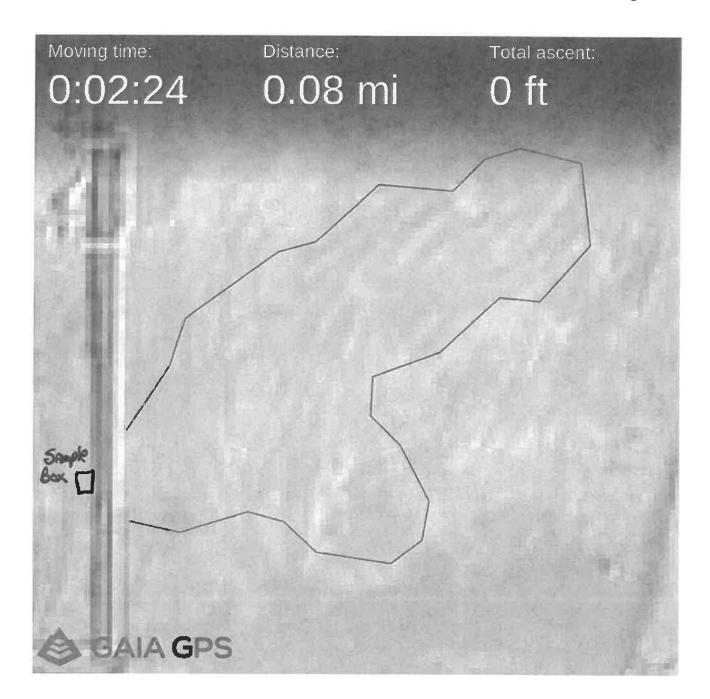
State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

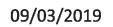
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Ed	ch of the following items must be included in the closure report.		
A scaled site and sampling diagram as de	scribed in 19.15.29.11 NMAC		
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)			
☐ Laboratory analyses of final sampling (N	ote: appropriate ODC District office must be notified 2 days prior to final sampling)		
Description of remediation activities			
and regulations all operators are required to re may endanger public health or the environment should their operations have failed to adequate human health or the environment. In addition, compliance with any other federal, state, or lowestore, reclaim, and re-vegetate the impacted accordance with 19.15.29.13 NMAC including	re is true and complete to the best of my knowledge and understand that pursuant to OCD rules out and/or file certain release notifications and perform corrective actions for releases which it. The acceptance of a C-141 report by the OCD does not relieve the operator of liability by investigate and remediate contamination that pose a threat to groundwater, surface water, OCD acceptance of a C-141 report does not relieve the operator of responsibility for al laws and/or regulations. The responsible party acknowledges they must substantially surface area to the conditions that existed prior to the release or their final land use in notification to the OCD when reclamation and re-vegetation are complete.		
Printed Name:	Title:		
Signature:	Date:		
email:	Telephone:		
OCD Only			
Received by:	Date:		
and remediate contamination that poses a thr	the responsible party of liability should their operations have failed to adequately investigate to groundwater, surface water, human health, or the environment nor does not relieve the federal, state, or local laws and/or regulations.		
Closure Approved by:	Date:		
Printed Name:	Title:		







District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Frencis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification						
Responsible Party						
Responsible	Party: Holly	Frontier Navajo R	efining LLC		OGRID: 1	15694
Contact Nam	e: Randy Da	ide			Contact Te	elephone: 575-746-5281
Contact emai	l: Lewis.Da	de@hollyfrontier.	com		Incident #	(assigned by OCD)
Contact mail	ing address:	501 E. Main St.	Artesia, NM 882	10		
Location of Release Source						
Latitude 32,51'7.21" N Longitude 104,23'41.39"W						
Site Name: I	HollyFrontie	r Navajo Refining	LLC		Site Type	e: Refinery
Date Release	e Discovered	1: 09/03/2019			API# (if ap	pplicable)
TT-24 T -44-	0					
Unit Letter	Section 9	Township Range County 17S 28E EDDY		nty		
	,	17S 28E EDDY				
Surface Own	er: State	Federal 7	fribal Private	(Name: .	HollyFront	tier Navajo Refining LLC)
	_			,		
			Nature an	d Vol	lume of	Release
_	Materi			h calculat	ions or specifi	iic justification for the volumes provided below)
Crude Oil Volume Released (bbls):			Volume Recovered (bbls):			
☐ Produced	Water	Volume Released (bbls)			Volume Recovered (bbls)	
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?		in the	☐ Yes ☐ No		
☐ Condensa	te			Volume Recovered (bbls)		
☐ Natural G	as	Volume Released (Mcf)			Volume Recovered (Mcf)	
Other (des	, ,		Volume/Weight Recovered (provide units)			
Non-Hazardous Greater than 25 BBLs		No recovered fluid				
Cooling Tower						
blowdown to city						
POTW						

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

	g line (½ inch) on Sample Station from Cooling Tower Blowdown line to City failed. Fluid sprayed to the East was shut off and tubing line repaired.
Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume is estimated to be greater than 25 bbls.
If YES, was immediate no Notice was made by Rand	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? dy Dade to OCD Santa Fe, Carl Chavez at 8:30 am, 9/4/2019 pm by phone.
	Initial Response
The responsible	e party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
active operating facility Released materials ha All free liquids and re	ease has been stopped. Is been secured to protect human health and the environment. Release was entirely contained in a secured and live been contained via the use of berms or dikes, absorbent pads, or other containment devices. Secoverable materials have been removed and managed appropriately. In above have not been undertaken, explain why:
has begun, please attach :	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environmanied to adequately investigated	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Lewis Da	Title: Environmental Specialist Date: 9/4/2019
email: Lewis.Dade@holly	yfrontier.com Telephone: 575-746-5281

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

OCD Only		
Received by:	Date:	

2019 FIRST QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

				Ending Volume 43,846,301 28,026,988 19,667,009 710,571
TOTAL CUMULATIVE Volume (barrels)	43,281,895 43,525,284 43,713,444 43,846,301	27,836,842 27,912,405 27,973,846 28,026,888	19,436,780 19,531,249 19,597,489 19,657,009 0 202,560 431,040 710,571	Beginning Volume 43,261,696 27,836,942 19,438,780 0
уо́ите (раттей)	Previous Quarter 263,589 186,160 132,857 584,606	Previous Quarter 75,463 61,440 53,143 190,046	Previous Guarter 92,469 66,240 59,520 216,229 Previous Guarter 202,560 225,480 275,480 710,571	Total BBL\$ 684,606 190,046 218,229 710,571 1,709,452
Minimum Volume (bpd)	85,029 103,087 112,663 TOTAL	8,503 27,840 27,634 TOTAL	0 0 26,571 TOTAL 72,980 78,720 204,069 TOTAL	WDW1 WDW2 WDW3 WDW4
Maximum Yolume (bpd)	319,920 281,280 159,429	99,909 77,760 81,840	153,051 104,640 91,406 327,840 899,840 373,063	
Average Volume (bpd)	263,589 188,160 132,857	75,463 61,440 53,143	92,469 66,240 69,520 202,580 279,531	
Minimum Annutar Pressure Mn (psig)	219 170 323	28 28 30 30 44 45 30 45 45 45 45 45 45 45 45 45 45 45 45 45	588 561 562 107 111	
Maximum Minimum Amular Amular Pressure Pressure Mx (esig) Mn (psig)	734 576 701	588 559 559	938 930 839 227 228 253	
Average Amular Pressure Av (pslg)	576 384 456	390 410 432	741 700 659 162 168	
Maximum Minimum Flow Flow (gpm) (gpm)	97 108	% % %	0 0 8	
Maximum Flow (gpm)	301 293 150	3 2 2	144 108 86 683 729 351	
Average Flow (gpm)	248 196 180	7 2 8 8	647 66 56 56 71 71 71 71 73 808 308	
Minimum Pressure (psig)	885 1,100	832 1,067 1,044	908 899 939 37 38	
Maximum Minimum Pressure Pressure (pskg) (pskg)	1,400 1,400 1,356	1,381 1,300	1,400 1,258 1,151 89 98 337	
Average Pressure (ps/g)	1,272 1,272 1,270 1,184 1,242	1,262 1,262 1,157 1,157	WDW-3 1,116 1,116 1,119 1,119 WDW-4 58 50 80 83	
_	30-015-27592 WDW-1- Jan-19 1,272 Feb-19 1,270 Mar-19 1,184	30-018-20884 WDW-2 Jan-19 1,262 Feb-19 1,252 Mar-19 1,157 Morthly Avg 1,224	30-015-28375 WDW-3 Jan-19 1,177 Feb-19 1,116 Mar-19 1,064 Monthly Avg 1,119 30-015-44677 WDW-4 Jan-19 56 Feb-19 50 Mar-19 80 Monthly Avg 83	

2019 SECOND QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

x Flow gpm	148 77 113 307			
G2 Disposal bbls Max Flow gpm	422,400 173,795 172,834 738,515			
	WDW-1 WDW-2 WDW-4			ume 01 83 43 86
				Ending Valume 44,288,701 28,200,783 19,829,843 1,449,086
TOTAL CUMULATIVE Volume (barrels)	43,846,301 43,985,158 44,133,958 44,288,701	28,026,988 28,076,331 28,136,040 28,200,783	19,657,009 19,709,468 19,774,300 19,829,843 710,571 851,257 1,174,467 1,449,086	422,400 43,846,301 173,795 28,026,988 172,834 19,657,009 739,515 710,571 1,507,544 92,240,889
Volume (barrels)	Previous Quar 1 138,857 1 148,800 7 134,743 422,400	Previous Quar 48,345 62,709 62,743	Previous Guar 52,437 84,834 55,543 L 172,834 Previous Guar 1 240,686 0 223,280 9 274,629	422,400 173,795 172,834 739,515 1,507,544
Minimum Volume (bpd)	110,057 130,731 102,857 TOTAL	Pr 0 36,137 41,143 TOTAL	9,267 10,629 1,029 TOTAL Pr 150,171 163,880 195,428	WDW1 WDW2 WDW3 WDW4
Maximum Volume (bpd)	152,229 158,366 150,171	78,171 82,903 80,229	120,343 117,977 114,171 114,171 317,829 336,926 304,457	
Average Volume (bpd)	138,857 148,800 134,743	48,343 62,709 62,743	62,467 64,834 65,643 240,686 223,200 274,629	
Minimura Annular Pressere Mn (psig)	464 193	300	548 387 300 126 101	
Maximum Annular Pressure Mx (psig)	726 729 618	629 418	750 652 515 243 239 254	
Average Annular Pressure Av (psig)	587 387	510 463 372	663 541 397 184 167	
Nitahaum Flow (gpm)	107 109 100	o ¥ 8	9 1 44 1 45 1 65 1 65 1 65	
Maximum Nithmum Flow Flow (gpm) (gpm)	148 149 146	85 85 85	## ## ## ## ## ## ## ## ## ## ## ## ##	
Average Flow (gpm)	135 140 131	47 95 10 10 10 10 10 10 10 10 10 10 10 10 10	54 64 65 65 23,4 210 237	
Average Pressure (peig)	1,240 1,283 1,223 1,223	.WDW-2 1,141 1,216 1,247 1,201	WDW-3 1,047 1,084 1,081 1,047 WDW-4 70 75 88 88	
-	30-015-27692 WDW-1 Aps-19 1,240 May-19 1,283 Jun-19 1,223 Montby Avg 1,249	30-015-20894 WDW-2 Apr-19 1,141 May-19 1,215 Jun-19 1,247 Menthy Avg 1,201	30-015-26575 WDW-S Apr-19 1,044 Jun-19 1,021 Monthly Avg 1,047 30-015-44877 WDW-4 Apr-19 70 May-18 75 Jun-19 98 Monthly Avg 81	

2019 THIRD QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

	Flow gpm	£ 2	109	329																						
	Max																									
	Q3 Disposal bbis Max Flow gpm	163,132	206,606	831,428																						
	BIT.4	WDW-2	WDW.3	WDW.4																						
	Ē	3	M	3																						
																						Ending Youme	44,664,118	28,363,915	20,038,449	2,280,514
TOTAL CUMULATIVE Volume	(barrels)	44,268,701	44,407,935	44,537.604	44,664,118		28,200,783	28,261,366	28,315,572	28,369,915		19,829,843	19,903,180	19,985,020	20,036,449		1 440 008	771.177	2.033.657	2,280,514		Beginning Volume	8,701	28,200,783	19,829,843	1,449,086
OT TO	(ba	44.26	44,40	44,53	44,86		28,20	28,28	28,31	28,36		19,82	19,90	19,98	20,03		1 44	2	203	2,280		eghnin	44,268,701	28,20	19,82	1.44
Volume	(barrels)	Previous Quar	139,234	129,869	126,514	395,417	Previous Quar	60,583	54,206	48,343	163,132	Previous Quar	73,337	81,840	51,429	206,606	Demánue Ouer	272.094	312,480	248,857	831,428	Total BBLS 8	395,417	163,132	206,608	831,428
Minimum Volume	(pdq)	ď	120,103	100,971	108,000	TOTAL	Æ	0	24,446	32,914	TOTAL	£	42,514	0	5,143	TOTAL	å	115.851	174.309	182,057	TOTAL		MOM	WDW2	PAIDW3	WDW4
Maximum Maimum Volums Volums	(pdq)		156,240	160,491	148,114			73,337	81,840	64,800			112,663	115,851	115,200			336 928	365,623	335,314						
Average	(pdq)		139,234	129,669	126,514			60,583	54,206	48,343			73,337	81,840	51,429			100 676	312,480	246,857						
Minimum Annular Pressure	Vin (psig)		271	104	193			325	360	900			250	218	300			G	102	100						
Maxdonum Minimum Annular Annular Pressure Pressure	Mx (psig) Mn (psig)		909	487	818			501	1,040	418			266	28	515			237	248	ž						
2 2 2	Av (pelg)		438	273	397			307	23	372			383	384	397			163	178	172						
_			13	88	105			0	R	띯			4	0	10			109	\$	171						
Maximum Minimum Flow Flow	(undis)		147	151	1			9	12	8			106	90	112			317	344	326						
	(Blow)		131	122	2	125		22	51	47	25		69	7.2	20	28		256	784	240	263					
Average Pressure	(Bysd)	WDW-1	1,219	1,089	1,133	1,150	WDW-2	1,224	1,160	1,137	1,174	MOM?	1,045	1,062	883	1,033	MOW	102	116	101	106					
		30-015-27592 WDW-1	Jul-19	Aug-19	Sep-19	Monthly Avg	30-015-20894 WDW-2	Jul-19	Aug-19	Sep-19	Monthly Avg	30-015-28575 WDW-3	Jul-19	Aug-19	Sep-19	Monthly Avg	30.015.44877 WDW.	Jul-19	Aug-19	Sep-19	Monthly Avg					

93,748,413

1,596,583

2019 FOURTH QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

	Max Flow gpm	143	R	102	312																							
	Max																											
	Q4 Disposal bbis	363,451	130,286	171,600	747,978																							
		NOW-1	MON-2	WDW-3	MOW4																							
		3	2	Q.	2																							
																								;	Ending Volume	40,047,008	20 208 048	3,028,492
2	. =	;	8	88	92	8		4	2 2	. 59	5		;	2	123	98	\$		4		6	OI.			ama e	<u> </u>	2 9	; 4
TOTAL	(barrads)		44,664,118	44,789,535	44,924,276	45,047,569		20 209 048	26 440 £64	28.485.938	28,494,201			20,030,443	20,105,535	20,154,906	20,208,049		2280.514	2,528,160	2,759,569	3,028,492			Total BBLS Beginning Volume	94,004,118	20,300,913	2,280,514
Volumo	(barrels)		Previous Quar	125,417	134,743	123,29H	383,461	Deschous Ones	AG 780	45.257	38,263	130,286		Fremous Lust	980'69	49,371	63,143	171,600	Previous Quar	247,646	231,429	268,903	747,978		Total BBLS	190 286	171 600	747,978
Maximum Minimum Votume Votume	(pdq)	1	Ē	115,851	121,371	108,411	TOTAL.	å	25.500	4.114	24.446	TOTAL	i	ī	6,377	2,057	9,568	TOTAL	ā	108.286	138,857	193,440	TOTAL		7	MENAN	WITH	MDM4
	(pdq)			143,486	151,200	166,177			20 000	86.371	51,017				103,097	121,371	97,783			337,989	302,400	343,303						
Average	(pdq)			125,417	134,743	123,291			AR TRR	45.257	36,263				980'69	49,371	53,143			247.648	231.429	268,903						
Minimum Annular Presente	Mn (paig)			342	352	338			9,40	380	388				25	410	416			8	119	105						
Maximum Minimum Annular Annular Preseure	Mx (pelg)			638	700	78			78.0	808	883				615	693	713			111	248	246						
Average Annular Presente	Av (psig)			472	538	636			E40	285	511				326	530	670			128	11	1 62						
Mardmum Minimum Flow Flow	(mdß)			109	118	효			24	₹ ₹	ន				9	C4	æ			9	85	22						
Mardmum Flow	(mdB)			136	147	146			Š.	2	8				26	118	85			318	8	22						
Average	(mdB)			118	131	116	122		14	4	88	4			8	84	20	28		233	225	253	237					
Average	(Bisd)			1,117	1,246	1,117	1,160	1 MINIMA	1 142	1227	1,207	1,192	71111111	2404	1,033	1,062	1,097	1,061	WDW-4		6	5	103					
			30-015-27:882 WOW.	Oct-19	Nov-19	Dec-19	Monthly Avg	SOLD SE PORGA MINIMA	Ont-10	Nov-19	Dec-19	Monthly Avg	1000	7-A10-A10-010-010-010-010-010-010-010-010	Oct-19	Nov-18	Dec-19	Monthly Avg	30-015-44677	Oct-19	Nov-19	Dec-19	Monthly Avg					

District (1825 North French, Hobbs, NW 88241

District II 811 & First St., Artesia, NM 88210 District III

1000 Rio Brazos, Azlec, NM 84710

State of New Mexico

Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVIBION
1220 South Saint Francis Drive
Santa Fe, NM 87505

OPERATOR S MONTHLY REPORT

Form C-115 First Page
Revised January 22, 2004
Instruction on Reverse Side

Oll on hand at end of month 6 Page 1 of 4 Transporter Ogrld DISPOSITION OF OIL, GAS, AND WATER 돐 1/2019 ZO Volume (Bbs/mcf) Oil on hand beginning of month 峀 15694 or Oil API 18 Gas BTU Gravity Disposition 3 OGRID: 17 Point of 15 Days Prod-uced Produced PRODUCTION 13 Barrels of water produced Oll/conden-Barrels of produced sato 1,272 W 1,262 W 28 W 1,177 W 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 INJECTION 2 263,589 75,463 92,469 202560 Volume 0 **⇔∪ООШ** ← ۵۵ 78890 ILLINOIS CAMP; MORROW NORTH Ω ۵ NAVAJO REFINERY GO. POOL NO. AND NAME 96918 NAVAJO PERMO-PENIN Property No. and Name Well No. & U-L-S-T-R 96101 SWD-DEVONIAN 30-015-44677 WDW-4 30-015-26575 WDW-3 30-015-27592 WDW - 1 30-015-20894 WDW - 2 APINO. 5 Address: 2 Operator

Signature	Printed Name & Title	tie E-Mail Address	40	Date	Phone Number
Operator	3. OGRID	UD 4 Month/Year	ear	6 Page 2 of 4	14

District | 1825 North French, F

District 1 1625 North French Hobbs Null 68241					ú	State of New Mexico	State of New Mexico	exico		1				Form C-115 First Page	15日	ret Pag
					077	OTT. COMPEDIATION DIVICED	OTTATTO	N DI		GTORY			į	revised January 22, 2004		ZZ, ZUU
817 S. Hart St. Artesia. NM 88210						And South	N Calat Fo		1	N CE			₽ ,		70 ·	18e di
District III						San(1229 South Seiff Francis Urive Santa Fe. NM 87505	ancis L 17505	<u> </u>				,-		ande	Amended Report
1000 Rio Brezse, Aziec, NM 84710					10	OPERATOR'S MONTHLY	S MONTH	ILY R	REPORT	RT						
2 Operator NAVAJO REFINERY CO.										3 OGRED:	15894			2/2019	1	
5 Address: 501 E. MAIN PO BOX 169, ARTESIA, NM.	8	ARTESIA, I	NM. 88210											6 Page 1 of 4	4	
		INJE	INJECTION			PRODUCTION	NOIL		_		DISPOSIT	DISPOSITION OF OIL, GAS, AND WATER	GAS, AN	D WATER		
Z POOL, NO. AND NAME	& U			F 0	12 Barrels of	\$	4	50	φ υ	4	节	19 Oil on hand	8	ឆ	Яo	8 g
Property No. and Name Wee No. & U-L-S-T-R	0 0	Volume	Pressure	_	Oil/conden- safe	Barrels of water	MCF Gas	Days Prod-	00	Point of Disposition	Gas BTU or Oil API	at beginning	Volume (Bbis/mcf)	Transportar Ogrid	۵ ۵	hand at ead of
API No.	w -			N 6	produced	produced	Produced	nced	шм		Gravity	of month			ш 🤞	month
98918 NAVAJO PERMO-PENN																
30-015-27592 WDW - 1 30-015-20894 WDW - 2	۵۵	188,160	1,270 W 1,252 W	33												
78890 ILLINOIS CAMP; MORROW NORTH	F.															
30-015-26575 WDW - 3	۵	66,240	1,116 W	₹												
96101 SWD-DEVONIAN		Calacc	Š	3												
	,		3													

Signature	L. R. DADE ENVIR. SPEC. Printed Name & Title	TEC. Lewis Dade @hollyfronter.com	riter.com	Date	575-746-5281 Phone Number
Operator	3 OGRID	RID 4 Month/Year	 	6 Page 2 of 4	14

District I 1826 North French, Hobbs, NW 88241

811 S. First St., Artesia, NW 58210 District III District

1000 Fito Brazos, Aztec, NIK 84710

OIL CONSERVATION DIVISION 1220 South Saint Francis Drive Santa Fe, NM 87505 OPSRATOR'S MONTHLY REPORT State of New Mexico Energy, Minerals & Netural Resources Department

2 Operator NAVAJO REFINERY CO.										3 OGRID:	15694			3/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM.	85 85	RTESIA, N	M. 88210											6 Page t of 4	4	
	٦	INJE	INJECTION			PRODUCTION	TION		_		DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI	D WATER		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R API No.	∞ ∪ O □ 叫 - ;	9 Volume	10 Preasure	-000 4	12 Barrela of Oll/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	2000	17 Point of Disposition	18 Gas BTU or Oil API Grawfty	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ognid	200m4	23 Oil on thand at end of month
96918 NAVAJO PERMO-PENN																
30-015-27592 WDW - 1 30-015-20894 WDW - 2	۵۵	132,857	1,184 W 1,157 W	33												
78890 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3	E 0	58,520	1,064 W	>												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	0	278531	80 ≫	≥												

Signature	Printed Name & Title	Title E-Maii Address	ddress	Date	Phone Number
2 Operator	S m	OGRID 4 Mor	4 Month/Year	6 Page 2 of 4	14

1625 North French, Hobbs, NM 88241 District |

811 S. First St., Artesia, NM 88210 District II District III

1000 Rio Brazos, Aztec, NM 84710

OIL CONSERVATION DIVISION Energy, Minerals & Natural Resources Department 1220 South Saint Francis Drive State of New Mexico

Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT

Form C-115 First Page Revised January 22, 2004

Amended Report

Instruction on Reverse Side

2 Operator NAVAJO REFINERY CO.								П	3 OGRID:	15694		,	4/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	29, A	ARTESIA, N	M. 88210										6 Page 1 of 4	4	
		INJE	INJECTION		PRODUCTION	NOL				DISPOSIT	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANE	WATER		
ш	∞ ∪		ı	12 Barrels of	55	4	र	و <u>چ</u>	17	85	19 Oil on hand	20	72	22 0	0 i o
Property No. and Name Well No. & U-S-T-R API No.	0 D W -	Volume	10 O Pressure D	Oll/conden- sate produced	Barrels of water produced	MCF Gas Produced	Days Prod- uced	0 0 111 %	Point of Disposition	Gas BTU or Oil API Gravity	at beginning of month	Volume (Bbls/mcf)	Transporter Ogrid	0 О Ш 4	hand at end of month
96918 NAVAJO PERMO-PENN															
30-015-27592 WDW - 1 30-015-20894 WDW - 2	ΩΩ	138,857 48,343	1,240 W 1,140 W												
78890 ILLINOIS CAMP; MORROW NORTH	_														
30-015-26575 WDW - 3	۵	52,457	1,047 W												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	۵	240686	70 W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

575-746-5281 Phone Number 6 Page 2 of 4 0 Date Lewis.Dade@hollyfrontier.com E-Mail Address 4 Month/Year ENVIR. SPEC. Printed Name & Title 3 OGRID L. R. DADE Signature 2 Operator

<u>District |</u> 1625 North French, Hobbs, NIM 88241

1625 North French, Hobbs, NM B DISUTED III
811 S. First St. Artesia, NM 882

811 S. First St., Artesia, NM 88210

District III
1000 Rio Brazos, Aztec, NM 84710

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South Saint Francis Drive
Santa Fe, NM 87505
OPERATOR'S MONTHLY REPORT

Instruction on Reverse Side

Form C-115 First Page Revised January 22, 2004

2 Operator NAVAJO REFINERY CO.									3 OGRID:	15694			5/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	ARTES	A NE	1. 88210										6 Page 1 of 4	4	1
		INJECTION			PRODUCTION	NOIL				DISPOSIT	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI	D WATER		
POOL NO. AND NAME C C Property No. and Name O Well No. & U-L-S-T-R D API No. E E	9 Volume		10 o Pressure D	Barrels of Oll/condensate produced	13 Nater produced	14 MCF Gas Produced	15 Days Prod- uced	* O O U W	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	% ооп 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN															11
30-015-27592 WDW - 1 D	148,800 62,709	709	1,283 W 1,215 W	>>											
MORROW NORT															
30-015-26575 WDW - 3		64,834	1,064 W	>											
96101 SWD-DEVONIAN 30-015-44677 WDW-4 D	223200	500	75 W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge. 24

575-746-5281 Phone Number 6 Page 2 of 4 0 Date Lewis.Dade@hollyfrontier.com E-Mail Address 4 Month/Year ENVIR. SPEC. Printed Name & Title 3 OGRID L. R. DADE Signature 2 Operator

<u>|</u> h French, Hobbs, NM 89241

1625 North French, Hobbs, NM 88241

District II

811 S. First St., Arlesia, NM 88210

District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South Saint Francis Drive
Santa Fe, NM 87505
OPERATOR: S. MONTHLY REPORT

Form C-115 First Page
Revised January 22, 2004
Instruction on Reverse Side

2 Operator NAVAJO REFINERY CO.							60	3 OGRID:	15694			6/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	9, ARTESI	A, NM. 88210										6 Page 1 of 4		
	N.	INJECTION		PRODUCTION	TION				DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI	WATER		
POOL NO. AND NAME Property No. and Name Well No. & L.L.S.T.R.	8 C C B C C C C C C C C C C C C C C C C	10 0 C C C C C C C C C C C C C C C C C C	Barrels of Oil/condensate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	\$ 0 0 U W W	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	2000m4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN														
30-015-27592 WDW - 1 30-015-20894 WDW - 2	D 134,743 D 62,743	43 1,223 W 43 1,247 W	>>											
78890 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3	тн D 55,543	1,031	A											
96101 SWD-DEVONIAN 30-015-44677 WDW-4	D 274629	W 86	>											

Signature	L. R. DADE Pri	ENVIR. SPEC.	Lewis.Dade@hollyfrontier.com E-Mail Address	Date	575-746-5281 Phone Number	1
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4)	

District | 1625 North French, Hobbs, NM 88241

DISTICT II
811 S. First St., Artesia, NM 86210
DISTICT III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico
Energy, Minerats & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South Saint Francis Drive
Santa Fe, NM 87505
OPERATOR'S MONTHLY REPORT

Form C-115 First Page Revised January 22, 2004

2 Operator NAVAJO REFINERY CO.								H	3 OGRID:	15694			7/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 8821	, ARTESIA	, NM. 88210											6 Page 1 of 4	4	
	¥ —	INJECTION			PRODUCTION	NOIL				DISPOSIT	DISPOSITION OF OIL, GAS, AND WATER	GAS, ANI	WATER)		
	Volume	10 Pressure	tt C Bar O Oll/c D s E pro	12 Barrels of Oll/condensate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	% ೧೦೦	17 Paint of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	<u> % по о ш +</u>	23 Oif on hand at end of month
96918 NAVAJO PERMO-PENN															
30-015-27592 WDW - 1 30-015-20894 WDW - 2	60,583	1,219 1,224	≯ ≯												
78890 ILLINOIS CAMP; MORROW NORTH	-														
30-015-26575 WDW - 3	73,337	1,045	*												
96101 SWD-DEVONIAN 30-015-44677 WDW-4 D	272091	163	≥												

Signature	L. R. DADE	ENVIR. SPEC.	Lewis.Dade@hollyfrontier.com E-Mail Address	Date	575-746-5281 Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	f 4

1625 North French, Hobbs, NM 88241

811 S. First St. Artesia, NM 88210 District II

1000 Rio Brazos, Aztec, NM 84710

District III

OIL CONSERVATION DIVISION Energy, Minerals & Natural Resources Department 1220 South Saint Francis Drive State of New Mexico

OPERATOR'S MONTHLY REPORT

Santa Fe, NM 87505

Form C-115 First Page Revised January 22, 2004 Instruction on Reverse Side **Amended Report**

Oil on hand at end of month 6 Page 1 of 4 Transporter Ogrid DISPOSITION OF OIL, GAS, AND WATER ᅜ 8/2019 (Bbls/mcf) Volume 8 Oil on hand beginning of month 15694 18 Gas BTU or Oil API Gravity Disposition 3 OGRID: 17 Point of 15 Days Prod-uced Produced Gas **PRODUCTION** 13 Barrels of produced water Oil/condensate produced Barrels of 1,099 W 1,160 W 115 W 1,062 W 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 Pressure INJECTION 9 129,669 54,206 81,840 312480 Volume Ø ΩΩ ۵ **∞ ∪ О □ ш −** 78890 ILLINOIS CAMP; MORROW NORTH Δ 2 Operator NAVAJO REFINERY CO. POOL NO. AND NAME 96918 NAVAJO PERMO-PENN Property No. and Name Well No. & U-L-S-T-R API No. 30-015-26575 WDW - 3 **96101 SWD-DEVONIAN** 30-015-44677 WDW-4 30-015-27592 WDW - 1 30-015-20894 WDW - 2 5 Address:

Signature	L. R. DADE Print	ENVIR. SPEC. ted Name & Title	Lewis Dade@hollyfrontier.com E-Mail Address	0 Date	575-746-5281 Phone Number
2 Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	f 4

1925 North Franch, Hobbs, NM 88241

811 S. First St., Artesia, NM 88210 District III District II

1000 Rio Brazos, Aztec, NM 84710

OIL CONSERVATION DIVISION 1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR'S MONTHLY REPORT Energy, Minerals & Natural Resources Department State of New Mexico

Form C-115 First Page Revised January 22, 2004 Instruction on Reverse Side

2 Operator NAVAJO REFINERY CO.										3 OGRID:	15694			9/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210	59, ART	ESIA, NI	M. 88210											6 Page 1 of 4	4	
		INJEC	INJECTION			PRODUCTION	TION				DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, ANI	WATER		
POOL NO. AND NAME Property No. and Name Well No. & U-L-S-T-R		9 Volume	10 Pressure	£ 0 0 0	12 Barrels of Oil/conden- sate	13 Barrels of water	14 MCF Gas	15 Days Prod-	8 n o o	17 Point of Disposition	18 Gas BTU or Oil API	19 Oli on hand at beginning	20 Volume (Bbls/mcf)	21 Transporter Ogrid	8000	23 Olf on hand at end of
API No.	w			ша	produced	produced	Produced	nced	ய		Gravity	of month			п 4	month
96918 NAVAJO PERMO-PENN																
30-015-27592 WDW - 1 30-015-20894 WDW - 2	57 7	126,514 48,343	1,133 W 1,137 W	≯ ≯												
78890 ILLINOIS CAMP; MORROW NORTH	Ŧ															
30-015-26575 WDW - 3	۵	51,429	600	}												
96101 SWD-DEVONIAN 30-015-44677 WDW-4	Ö	246857	101	3												

Signature	L. R. DADE EN Printed Na	ENVIR. SPEC.	Lewis Dade@hollyfrontier.com E-Kfail Address	Date	575-746-5281 Phone Number
Operator		3 OGRID	4 Month/Year	6 Page 2 of 4	÷ 4

1625 North Franch, Hobbs, NM 88241

District II 811 S. First St., Atasia, NM 88210

District III

1000 Rto Brazos, Aztec, NM 84710

State of New Mexico Energy, Winerals & Netural Resources Department

OIL CONSERVATION DIVISION 1220 South Saint Francis Drive Santa Fe, NM 87505 OPERATOR 'S MONTHLY REPORT

Operator h										3 OGRAD:	15894			10/2019	П	
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM.	59, AR	TESIA, N	M. 86210											6 Page 1 of 4	4	
		INJE	INJECTION			PRODUCTION	NOIL		_		DISPOSIT	DISPOSITION OF OIL, GAS, AND WATER	GAS, AN	D WATER		
POOL NO. AND NAME Property No. and Name Well No. & LL-B-T-R API No.	∞ ∩ О О Ш −	Volume	10 Pressure	- U O D W N	Barrels of Oll/conden- sate produced	13 Barrels of water produced	14 NCF Gas Produced	15 Days Prod- uced	\$000 B 4	17 Point of Disposition	18 Gas BTU or Oli API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbisimcf)	21 Transporter Ognid	2000-	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN																
30-015-27592 WDW - 1 30-015-20894 WDW - 2	۵۵	125,417	1,117 W 1,142 W	33												
78880 ILLINOIS CAMP; MORROW NORTH 30-015-26575 WDW - 3	= 0	69,086	W 689,1	8												
96101 SWD-DEVONIAN 30-015-44677 WDW-4		247,646	100 W	\$												

Signature	L. R. DADE ENVIR. SPEC. Printed Name & Title	E-Wail Adress	Date	Phone Number
Operator	3 OGRID	4 Month/Year	6 Page 2 of	14

1825 North French, Hobbs, NM 88241

811 S. First St., Artesla, NM 68210 District III District II

1000 Rio Brazos, Azdec, NM 84710

OIL CONSERVATION DIVISION Energy, Minerals & Natural Resources Department 1220 South Saint Francis Drive State of New Mexico

OPERATOR'S MONTHLY REPORT

Santa Fe, NM 87505

Instruction on Reverse Side Form C-115 First Page Revised January 22, 2004

Oil on hand at end of month 6 Page 1 of 4 21 Transporter Ogrid DISPOSITION OF OIL, GAS, AND WATER 11/2019 (Bbls/mcl) 20 Volume Oil on hand beginning of month Ħ 15694 18 Gas BTU or Oil API Gravity 17 Point of Disposition a OGRID: 15 Days Prod-uced Produced MCF Gas **PRODUCTION** 13 Barrels of produced Water Oil/conden-Barrels of produced sate 1,246 W 1,227 W 100 W 1,052 W 501 E. MAIN PO BOX 159, ARTESIA, NM. 88210 Pressure INJECTION 9 134,743 45,257 49,371 231,429 Volume ø **∞ ∪ О □ ш ←** 00 ۵ 78890 ILLINOIS CAMP; MORROW NORTH 2 Operator NAVAJO REFINERY CO. POOL NO. AND NAME 96918 NAVAJO PERMO-PENN Property No. and Name Well No. & U-L-S-T-R 30-015-26575 WDW - 3 **86101 SWD-DEVONIAN** 30-015-44677 WDW-4 30-015-27592 WDW - 1 API No. 5 Address:

Signature	L. R. DADE ENVIR. SPEC. Printed Name & Title	E-Mall Address	Date	Phone Number
2 Operator	3 OGRID	4 Month/Year	6 Page 2 of 4	of 4

1625 North French, Hobbs, NM 88241 811 S. First St., Artesia, NM 38210 District III District II

1000 Rio Brazos, Aztec, NM 84710

OIL CONSERVATION DIVISION State of New Mexico Energy, blinemis & Matural Resources Department

Form C-115 First Page Revised January 22, 2004

Instruction on Reverse Side

1220 South Saint Francis Drive Santa Fo, NM 67505 OPERATOR 'S MONTHLY REPORT

2 Operator NAVAJO REFINERY CO.				П						3 OGRID:	15694			12/2019		
5 Address: 501 E. MAIN PO BOX 159, ARTESIA, NM.	59, AF	RTESIA, N	M. 88210											6 Page 1 of 4	4	
		INJE	INJECTION			PRODUCTION	TION		_		DISPOSITI	DISPOSITION OF OIL, GAS, AND WATER	, GAS, AN	D WATER		
Z POOL NO. AND NAME. Property No. and Name Well No. & LL-S-T-R API No.	. O O O M .	9 Volume	10 Pressure	Ерорыя	12 Barrels of Oil/conden- sate produced	13 Barreis of water produced	14 MCF Gas Produced	15 Days Prod- uced		17 Point of Disposition	18 Gas BTU or Oil AP! Gravity	18 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 · Transporter Ogrfd	хоодш.	23 Oli on hand at end of month
96818 NAVAJO PERMO-PENN				, L					-							
30-015-27592 WDW - 1 30-015-20894 WDW - 2	۵۵	123,291 38,263	1,117 W 1,207 W	≥≥												
78890 ILLINOIS CAMP; MORROW NORTH	Ŧ															
30-015-26575 WDW - 3	۵	53,143	1,097 W	3												
98101 SWD-DEVONIAN 30-015-44677 WDW-4	0	268,903	109 W	≥												

Signature	L. R. DADE Printed	ENVIR. SPEC. Printed Name & Title	E-Mail Address	Date	5/5-746-5281 Phone Number
Operator		3 OGRID	4 Month/Year	B Page 2 of 4	14



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

April 18, 2019

Robert Combs Navajo Refining Company P.O. Box 159 Artesia, NM 88211-0159

TEL: (575) 748-3311

FAX:

RE: Quarterly WDW 1 2 3 Inj Well OrderNo.: 1903D14

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/27/2019 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 #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 4/18/2019

CLIENT: Navajo Refining Company Client Sample ID: WDW-1,2,&3 Effluent Quarterly WDW 1 2 3 Inj Well **Project:** Collection Date: 3/26/2019 8:15:00 AM 1903D14-001 Matrix: AQUEOUS Received Date: 3/27/2019 8:40:00 AM Lab ID:

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8081: PESTICIDES TCLP						Analyst	JME
Chlordane	ND	0.030		mg/L	1	4/16/2019 12:06:41 PM	43999
Surr: Decachlorobiphenyl	26.3	29.4-99.8	S	%Rec	1	4/16/2019 12:06:41 PM	43999
Surr: Tetrachloro-m-xylene	25.0	20.7-100		%Rec	1	4/16/2019 12:06:41 PM	43999
EPA METHOD 8270C TCLP						Analyst	JDC
2-Methylphenol	ND	200		mg/L	1	4/13/2019 10:55:55 PM	44003
3+4-Methylphenol	ND	200		mg/L	1	4/13/2019 10:55:55 PM	44003
2,4-Dinitrotoluene	ND	0.13		mg/L	1	4/13/2019 10:55:55 PM	44003
Hexachlorobenzene	ND	0.13		mg/L	1	4/13/2019 10:55:55 PM	44003
Hexachlorobutadiene	ND	0.50		mg/L	1	4/13/2019 10:55:55 PM	44003
Hexachloroethane	ND	3.0		mg/L	1	4/13/2019 10:55:55 PM	44003
Nitrobenzene	ND	2.0		mg/L	1	4/13/2019 10:55:55 PM	44003
Pentachlorophenol	ND	100		mg/L	1	4/13/2019 10:55:55 PM	44003
Pyridine	ND	5.0		mg/L	1	4/13/2019 10:55:55 PM	44003
2,4,5-Trichlorophenol	ND	400		mg/L	1	4/13/2019 10:55:55 PM	44003
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	4/13/2019 10:55:55 PM	44003
Cresols, Total	ND	200		mg/L	1	4/13/2019 10:55:55 PM	44003
Surr: 2-Fluorophenol	45.0	15-82.5		%Rec	1	4/13/2019 10:55:55 PM	44003
Surr: Phenol-d5	35.3	15-74.2		%Rec	1	4/13/2019 10:55:55 PM	44003
Surr: 2,4,6-Tribromophenol	73.2	18.6-118		%Rec	1	4/13/2019 10:55:55 PM	44003
Surr: Nitrobenzene-d5	67.3	30.4-106		%Rec	1	4/13/2019 10:55:55 PM	44003
Surr: 2-Fluorobiphenyl	48.9	15-104		%Rec	1	4/13/2019 10:55:55 PM	44003
Surr: 4-Terphenyl-d14	51.6	15-133		%Rec	1	4/13/2019 10:55:55 PM	44003
SPECIFIC GRAVITY						Analyst	JRR
Specific Gravity	1.001	0			1	4/3/2019 10:28:00 AM	R58847
EPA METHOD 300.0: ANIONS						Analyst	smb
Fluoride	9.6	0.50	*	mg/L	5	4/1/2019 10:44:34 PM	R58816
Chloride	420	25	*	mg/L	50	4/8/2019 2:18:56 PM	R58998
Bromide	0.94	0.50		mg/L	5	4/1/2019 10:44:34 PM	R58816
Phosphorus, Orthophosphate (As P)	ND	2.5	Н	mg/L	5	4/1/2019 10:44:34 PM	R58816
Sulfate	1500	25	*	mg/L	50	4/8/2019 2:18:56 PM	R58998
Nitrate+Nitrite as N	ND	1.0		mg/L	5	4/1/2019 11:09:23 PM	R58816
SM2510B: SPECIFIC CONDUCTANCE						Analyst	JRR
Conductivity	4100	5.0		µmhos/c	: 1	4/3/2019 1:19:58 PM	R58867
SM2320B: ALKALINITY						Analyst	JRR
Bicarbonate (As CaCO3)	488.6	20.00		mg/L Ca	1	4/3/2019 1:19:58 PM	R58867
Carbonate (As CaCO3)	ND	2.000		mg/L Ca		4/3/2019 1:19:58 PM	R58867
Total Alkalinity (as CaCO3)	488.6	20.00		mg/L Ca		4/3/2019 1:19:58 PM	R58867
· , ,				-			

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

Qualifiers:

Value exceeds Maximum Contaminant Level.

Н Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

[%] Recovery outside of range due to dilution or matrix

Value above quantitation range

ND Not Detected at the Reporting Limit

Reporting Detection Limit

Reporting Detection Limit Sample container temperature is out of limit as specified at testcode 1 of 16

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 4/18/2019

CLIENT: Navajo Refining Company Client Sample ID: WDW-1,2,&3 Effluent Quarterly WDW 1 2 3 Inj Well **Project:** Collection Date: 3/26/2019 8:15:00 AM 1903D14-001 Matrix: AQUEOUS Received Date: 3/27/2019 8:40:00 AM Lab ID:

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	CJS
Total Dissolved Solids	3130	100	*D	mg/L	1	4/3/2019 5:30:00 PM	44042
EPA METHOD 7470: MERCURY						Analyst:	pmf
Mercury	ND	0.00020		mg/L	1	4/5/2019 12:09:40 PM	44137
EPA METHOD 6010B: DISSOLVED METALS						Analyst:	ELS
Calcium	330	5.0		mg/L	5	4/3/2019 10:55:32 AM	A58849
Magnesium	100	5.0		mg/L	5	4/3/2019 10:55:32 AM	A58849
Potassium	64	5.0		mg/L	5	4/3/2019 10:55:32 AM	A58849
Sodium	360	5.0		mg/L	5	4/3/2019 10:55:32 AM	A58849
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	ELS
Arsenic	ND	0.020		mg/L	1	4/3/2019 9:09:22 AM	44006
Barium	0.045	0.020		mg/L	1	4/3/2019 9:09:22 AM	44006
Cadmium	ND	0.0020		mg/L	1	4/3/2019 9:09:22 AM	44006
Chromium	ND	0.0060		mg/L	1	4/3/2019 9:09:22 AM	44006
Lead	ND	0.0050		mg/L	1	4/5/2019 10:10:57 AM	44006
Selenium	ND	0.050		mg/L	1	4/3/2019 9:09:22 AM	44006
Silver	ND	0.0050		mg/L	1	4/3/2019 9:09:22 AM	44006
TCLP VOLATILES BY 8260B						Analyst:	RAA
Benzene	ND	0.50		mg/L	200	4/3/2019 12:15:00 AM	R58834
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	200	4/3/2019 12:15:00 AM	R58834
2-Butanone	ND	200		mg/L	200	4/3/2019 12:15:00 AM	R58834
Carbon Tetrachloride	ND	0.50		mg/L	200	4/3/2019 12:15:00 AM	R58834
Chloroform	ND	6.0		mg/L	200	4/3/2019 12:15:00 AM	R58834
1,4-Dichlorobenzene	ND	7.5		mg/L	200	4/3/2019 12:15:00 AM	R58834
1,1-Dichloroethene	ND	0.70		mg/L	200	4/3/2019 12:15:00 AM	R58834
Tetrachloroethene (PCE)	ND	0.70		mg/L	200	4/3/2019 12:15:00 AM	R58834
Trichloroethene (TCE)	ND	0.50		mg/L	200	4/3/2019 12:15:00 AM	R58834
Vinyl chloride	ND	0.20		mg/L	200	4/3/2019 12:15:00 AM	R58834
Chlorobenzene	ND	100		mg/L	200	4/3/2019 12:15:00 AM	R58834
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	200	4/3/2019 12:15:00 AM	R58834
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	200	4/3/2019 12:15:00 AM	R58834
Surr: Dibromofluoromethane	101	70-130		%Rec		4/3/2019 12:15:00 AM	R58834
Surr: Toluene-d8	96.7	70-130		%Rec	200	4/3/2019 12:15:00 AM	R58834

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Н Holding times for preparation or analysis exceeded
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Value above quantitation range
- ND Not Detected at the Reporting Limit
- Reporting Detection Limit
- Reporting Detection Limit Sample container temperature is out of limit as specified at testcode 2 of 16

Analytical Report Lab Order 1903D14

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 4/18/2019

CLIENT: Navajo Refining Company **Client Sample ID:** TRIP BLANK

Quarterly WDW 1 2 3 Inj Well **Collection Date: Project:**

1903D14-002 Received Date: 3/27/2019 8:40:00 AM Lab ID: **Matrix:** TRIP BLANK

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
TCLP VOLATILES BY 8260B					Analys	: RAA
Benzene	ND	0.50	mg/L	1	4/3/2019 1:27:00 AM	R58834
1,2-Dichloroethane (EDC)	ND	0.50	mg/L	1	4/3/2019 1:27:00 AM	R58834
2-Butanone	ND	200	mg/L	1	4/3/2019 1:27:00 AM	R58834
Carbon Tetrachloride	ND	0.50	mg/L	1	4/3/2019 1:27:00 AM	R58834
Chloroform	ND	6.0	mg/L	1	4/3/2019 1:27:00 AM	R58834
1,4-Dichlorobenzene	ND	7.5	mg/L	1	4/3/2019 1:27:00 AM	R58834
1,1-Dichloroethene	ND	0.70	mg/L	1	4/3/2019 1:27:00 AM	R58834
Tetrachloroethene (PCE)	ND	0.70	mg/L	1	4/3/2019 1:27:00 AM	R58834
Trichloroethene (TCE)	ND	0.50	mg/L	1	4/3/2019 1:27:00 AM	R58834
Vinyl chloride	ND	0.20	mg/L	1	4/3/2019 1:27:00 AM	R58834
Chlorobenzene	ND	100	mg/L	1	4/3/2019 1:27:00 AM	R58834
Surr: 1,2-Dichloroethane-d4	101	70-130	%Rec	1	4/3/2019 1:27:00 AM	R58834
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	4/3/2019 1:27:00 AM	R58834
Surr: Dibromofluoromethane	97.9	70-130	%Rec	1	4/3/2019 1:27:00 AM	R58834
Surr: Toluene-d8	97.5	70-130	%Rec	1	4/3/2019 1:27:00 AM	R58834

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Value above quantitation range
- ND Not Detected at the Reporting Limit
- Reporting Detection Limit
- Reporting Detection Limit
 Sample container temperature is out of limit as specified at testcode 3 of 16

1903D14-001F WDW-1,2,&3 EFFLUENT

SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE.

學

Collected date/time: 03/26/19 08:15

Wet Chemistry by Method 4500 CN E-2011

***************************************	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/l		mg/I		date / time	
Reactive Cyanide	0.0141		0.00500	1	04/06/2019 17:13	WG1261158



Wet Chemistry by Method 4500H+ B-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	Su			date / time		
Corrosivity by pH	7.56	<u>T8</u>	1	04/02/2019 17:45	WG1259617	



Sample Narrative:

L1084745-01 WG1259617: 7.56 at 14.8C



Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/I		mg/I		date / time	
Reactive Sulfide	0.123		0.0500	1	04/02/2019 18:35	WG1259688



Al

Sc

Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	deg F			date / time		
Flashpoint	DNF at 170		1	04/05/2019 22:16	WG1261310	



α	0
Ц	
Ξ	=
ù)
0	V
ĭ	5
š	-

Wet Chemistry by Method 4500 CN E-2011

QUALITY CONTROL SUMMARY

Method Blank (MB)

	MB RDL	mg/l	0.00500
	MB MDL	l/gm	0.00180
	MB Qualifier		
4/06/19 16:41	MB Result	l/gm	n
(MB) R3399162-1 04/06/19 16:41		Analyte	Reactive Cyanide

L1084328-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1084328-06 04/06/19 16:48 • (DUP) R3399162-3 04/06/19 16:49

OUP Qualifier DUP RPD Limits	96	20
Dilution DUP RPD DUP	%	0.000
DUP Result Dilu	mg/l	0.000
Original Result	l/gm	QN
	Analyte	Reactive Cyanide

C

Š

 $\overline{\mathbb{O}}$

 $\overline{\triangleleft}$

Ss

ONE LAB. NATIONWIDE.

L1084328-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1084328-14 04/06/19 17:07 • (DUP) R3399162-8 04/06/19 17:08

DUP RPD Limits	96	20
DUP Qualifier		
DUP RPD	96	0.000
Dilution		-
DUP Result	l/gm	
Original Result	l/gm	QN
	Analyte	Reactive Cyanide

Sc

Laboratory Control Sample (LCS)

	LCS Qualifier		
	Rec. Limits	%	85.0-115
	LCS Rec.	96	87.8
	t LCS Result	l/gm	0.0978
1/06/19 16:42	Spike Amount	l/gm	0.100
(LCS) R3399162-2 04/06/19 16:42		Analyte	Reactive Cyanide

L1084328-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1084328-07 04/06/19 16:50 • (MS) R3399162-4 04/06/19 16:54	(06/19 16:50 • (MS)	R3399162-4 04	1/06/19 16:54	(MSD) R3399	(MSD) R3399162-5 04/06/19 16:55	19 16:55						
	Spike Amount	Spike Amount Original Result MS Result	MS Result	MSD Result	MSD Result MS Rec. MSD Rec.	MSD Rec.	Dilution	Dilution Rec. Limits	MS Qualifier	MSD Qualifier RPD	PO	RPD Limits
Analyte	l/gm	mg/l	∥gm	mg/l	96	%		%		8		%
Reactive Cyanide	0.100	ND	0.0790	0.0859	79.0	85.9	-	75.0-125		80	8.37	20

L1084328-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(US) FIGO-15 04/00/19 17:02 • (MS) R3339102-0 04/00/19 17:03 • (MSD)												
	Spike Amount	Spike Amount Original Result MS Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Dilution Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	l/gm	mg/l	mg/l	l/gm	%	⁶⁰		96			26	%
Reactive Cyanide	0.100	ON	0.0801	0.0703	80.1	70.3	-	75.0-125		97	13.0	20

04/09/19 09:12 DATE/TIME:

L1084745

PROJECT:

Hall Environmental Analysis Laboratory

ACCOUNT:

WG1259617

QUALITY CONTROL SUMMARY

Wet Chemistry by Method 4500H+ B-2011

Laboratory Control Sample (LCS)

Rec. Limits 101-0.66 LCS Rec. 7.66 Spike Amount LCS Result 9.97 (LCS) R3397714-1 04/02/19 17:45 Su 10.0 Corrosivity by pH Analyte

LCS Qualifier

Sample Narrative:

LCS: 9.97 at 17.6C

C SS Š ONE LAB. NATIONWIDE.

Ō

V

SC

DATE/TIME: 04/09/19 09:12

SDG: L1084745

PROJECT:

Hall Environmental Analysis Laboratory

ACCOUNT:

WG1259688
Wet Chemistry by Method 9034-9030B

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

SS

Cn

Š

Ō

4

Sc

Method Blank (MB)

			0500
	3DL		00
	MB RDL	l/gm	0.05
	MB MDL	∥/gш	0.00650
	MB Qualifier		
04/02/19 18:18	MB Result	l/gm	n
(MB) R3397727-1 (Analyte	Reactive Sulfide

	ווים ויכאור	מווומ	אטווי סווי	MD ADL	
Analyte	l/gm		l/gm	l/gm	
Reactive Sulfide	n		0.00650	0.0500	
Laboratory Control Sample (LCS)	rol Sample (Lo	CS)			
(LCS) R3397727-2 04/02/19 18:19	02/19 18:19				
	Spike Amount	Spike Amount LCS Result LCS Rec.	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	l/gm	l/gm	96	%	
Reactive Sulfide	0.500	0.476	95.2	85.0-115	

SDG: L1084745

PROJECT:

Hall Environmental Analysis Laboratory

ACCOUNT:

DATE/TIME: 04/09/19 09:12

WG1261310 Wet Chemistry by Method D93/1010A	thod D93/101()A		Q	QUALITY CONTROL SUMMARY	ONE LAB. NATIONWIDE.	16
L1084808-02 Original Sample (OS) • Duplicate (DUP)	jinal Sample	10 · (SO) ÷	uplicate (D	UP)		S. Common of the	
(OS) L1084808-02 04/05/19 22:16 • (DUP) R3399058-2 04/05/19 22:16	5/19 22:16 • (DU)	P) R3399058	-2 04/05/19 2.	2:16			0
	Original Result DUP Result	DUP Result	Dilution DUP RPD		DUP Qualifier DUP RPD Limits	177	3
Analyte	deg F	deg F	96	مجمعون	96		U
Flashpoint	DNF at 170	DNF at 170	1 0.	0.000	10] [0	
							Ss
L1085800-01 Original Sample (OS) • Duplicate (DUP)	inal Sample	10S) • Dr	iplicate (Dt	JP)		4	Ę.
(OS) L1085800-01 04/05/19 22:16 • (DUP) R3399058-3 04/05/19 22:16	3/19 22:16 • (DUF	r) R3399058-	3 04/05/19 22	:16			
	Original Result	Original Result DUP Result	Dilution DUP RPD		DUP Qualifier Limits	ល់	J.
Analyte	deg F	deg F	96		96		
Flashpoint	DNF at 170	DNF at 170	1 0.	0.000	10	9	C
)
Laboratory Control Sample (LCS)	Il Sample (L	CS)					Ū
(LCS) R3399058-1 04/05/19 22:16	3/19 22:16						
	Spike Amount LCS Result	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	13	V
Analyte	deg F	deg F	96	96			
Flashpoint	82.0	81.6	99.5	96.0-104		5	Sc

Hall Environmental Analysis Laboratory ACCOUNT:

PROJECT:

SDG: L1084745

DATE/TIME: 04/09/19 09:12



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.



Ss

Cn

Sr

Abbreviations and Definitions

/ IDDI C VICITO	is and behindons
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the



laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or Limits



The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG



This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.



The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte

Uncertainty (Radiochemistry)

Original Sample

Qualifier

Result

Confidence level of 2 sigma.

A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will Case Narrative (Cn)

be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.

Quality Control Summary (Qc)

This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.

Sample Chain of Custody (Sc)

This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.

Sample Results (Sr)

This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.

Sample Summary (Ss)

This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Q	ua	lifiei	•

Description

J6

The sample matrix interfered with the ability to make any accurate determination; spike value is low.

T8

Sample(s) received past/too close to holding time expiration.

1903D14-001G WDW-1,2,&3 EFFLUENT

SAMPLE RESULTS - 01 ONE LAB. NATIONWIDE.



Wet Chemistry by Method 2580

Collected date/time: 03/26/19 08:15

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	mV			date / time	
ORP	192	T8	1	04/06/2019 11:25	WG1261694





















C SS Sc Š 5 4 ONE LAB. NATIONWIDE.

QUALITY CONTROL SUMMARY

L1084668-01

DUP RPD Limits

DUP Qualifier

Dilution DUP RPD

Original Result DUP Result

L1084668-01 Original Sample (OS) • Duplicate (DUP) (OS) L1084668-01 04/06/19 11:25 • (DUP) R3399096-2 04/06/19 11:25

Wet Chemistry by Method 2580

WG1261694

20 %

0.522

7m 191

шV 192

Analyte ORP

LCS Qualifier

Rec. Limits

LCS Rec.

Spike Amount LCS Result

Laboratory Control Sample (LCS)

(LCS) R3399096-1 04/06/19 11:25

95.7-104

100

mV 228

228 Am/

Analyte

Ë	
	11.



Ss

Cn

Sr

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.

GI

(Radiochemistry)

Case Narrative (Cn)

A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.

Quality Control Summary (Qc)

This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.

Sample Chain of Custody (Sc)

This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.

Sample Results (Sr)

This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.

Sample Summary (Ss)

This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier

Description

T8

Sample(s) received past/too close to holding time expiration

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

<u>-</u>	Refining Co		Well							
Sample ID: MB	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	300.0: Anions	;		
Client ID: PBW	Batch	n ID: R5	8816	F	RunNo: 5	8816				
Prep Date:	Analysis D	ate: 4/	1/2019	5	SeqNo: 1	976714	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As F	ND ND	0.50								
Nitrate+Nitrite as N	ND	0.20								
Sample ID: LCS	SampT	ype: LC	s	Tes	tCode: El	PA Method	300.0: Anions	3		
Client ID: LCSW	Batch	n ID: R5	8816	F	RunNo: 5	8816				
Prep Date:	Analysis D	oate: 4/	1/2019	8	SeqNo: 1	976715	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Bromide	2.4	0.10	2.500	0	95.1	90	110			
Phosphorus, Orthophosphate (As F	4.7	0.50	5.000	0	93.6	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	98.1	90	110			
Sample ID: MB	SampT	ype: m k	olk	Tes	tCode: El	PA Method	300.0: Anions	<u> </u>		
Client ID: PBW	Batch	n ID: R5	8998	F	RunNo: 5	8998				
Prep Date:	Analysis D	ate: 4/	8/2019	\$	SeqNo: 1	985185	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Sample ID: LCS	SampT	ype: Ics	· · · · · · · · · · · · · · · · · · ·	Tes	tCode: El	PA Method	300.0: Anions			
Client ID: LCSW	Batch	n ID: R5	8998	F	RunNo: 5	8998				
Prep Date:	Analysis D	oate: 4/	8/2019	8	SeqNo: 1	985187	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	98.9	90	110			

Qualifiers:

Sulfate

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

10

0.50

10.00

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

0

100

90

110

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 1903D14-001BMS SampType: MS TestCode: EPA Method 8081: Pesticides TCLP

Client ID: WDW-1,2,&3 Effluen Batch ID: 43999 RunNo: 59212

Prep Date: 4/1/2019 Analysis Date: 4/16/2019 SeqNo: 1993657 Units: %Rec

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

 Surr: Decachlorobiphenyl
 0.00088
 0.002500
 35.2
 29.4
 99.8

 Surr: Tetrachloro-m-xylene
 0.00076
 0.002500
 30.6
 20.7
 100

Sample ID: 1903D14-001BMSD SampType: MSD TestCode: EPA Method 8081: Pesticides TCLP

Client ID: WDW-1,2,&3 Effluen Batch ID: 43999 RunNo: 59212

Prep Date: 4/1/2019 Analysis Date: 4/16/2019 SeqNo: 1993658 Units: %Rec

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Surr: Decachlorobiphenyl 29.4 0.0017 0.002500 66.0 99.8 0 0 Surr: Tetrachloro-m-xylene 0.0015 0.002500 59.0 20.7 0 0 100

Qualifiers:

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

SampType: LCS

WO#: 1903D14

18-Apr-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 100ng lcs2

•							-			
Client ID: LCSW	Batc	h ID: R5	8834	F	RunNo: 5	8834				
Prep Date:	Analysis [Date: 4/	2/2019	5	SeqNo: 1	978496	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50	0.02000	0	100	70	130			
1,1-Dichloroethene	ND	0.70	0.02000	0	95.1	70	130			
Trichloroethene (TCE)	ND	0.50	0.02000	0	90.3	70	130			
Chlorobenzene	ND	100	0.02000	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.011		0.01000		109	70	130			
Surr: 4-Bromofluorobenzene	0.0099		0.01000		99.2	70	130			
Surr: Dibromofluoromethane	0.010		0.01000		103	70	130			
Surr: Toluene-d8	0.0097		0.01000		97.3	70	130			
Sample ID: rb2	Samp	Гуре: МЕ	BLK	Tes	tCode: T (CLP Volatil	es by 8260B			
Client ID: PBW	Batc	h ID: R5	8834	F	RunNo: 5	8834				
Prep Date:	Analysis [Date: 4/	2/2019	5	SeqNo: 1	978497	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
D	ND	0.50		•			•		•	

TestCode: TCLP Volatiles by 8260B

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
1,2-Dichloroethane (EDC)	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,1-Dichloroethene	ND	0.70								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Chlorobenzene	ND	100								
Surr: 1,2-Dichloroethane-d4	0.010		0.01000		104	70	130			
Surr: 4-Bromofluorobenzene	0.010		0.01000		100	70	130			
Surr: Dibromofluoromethane	0.010		0.01000		99.5	70	130			
Surr: Toluene-d8	0.0099		0.01000		98.6	70	130			

Sample ID: 1903d14-001ams	Samp	оТуре: МЅ	3	Tes	tCode: T (
Client ID: WDW-1,2,&3 Efflu	i en Bat	ch ID: R5	8834	F	RunNo: 5	8834				
Prep Date:	Analysis	Date: 4/3	3/2019	8	SeqNo: 1	978503	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.1	0.00017	4.000	0.02440	102	70	130			
1,1-Dichloroethene	4.1	0.00021	4.000	0	102	67.6	130			
Trichloroethene (TCE)	3.9	0.00017	4.000	0	97.2	70	130			
Chlorobenzene	4.2	0.00019	4.000	0.03160	105	70	130			
Surr: 1,2-Dichloroethane-d4	2.1		2.000		104	70	130			

^{*} Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

^{8 %} Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903D14

18-Apr-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 1903d14-001ams SampType: MS TestCode: TCLP Volatiles by 8260B

Client ID: WDW-1,2,&3 Effluen Batch ID: R58834 RunNo: 58834

Prep Date: Analysis Date: 4/3/2019 SeqNo: 1978503 Units: mg/L

Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Result Surr: 4-Bromofluorobenzene 1.9 2.000 96.7 70 130 Surr: Dibromofluoromethane 1.9 2.000 96.5 70 130 Surr: Toluene-d8 2.0 2.000 97.7 70 130

Sample ID: 1903d14-001amsd SampType: MSD TestCode: TCLP Volatiles by 8260B

Client ID: WDW-1,2,&3 Effluen Batch ID: R58834 RunNo: 58834

Prep Date: Analysis Date: 4/3/2019 SeqNo: 1978504 Units: mg/L

	-						_			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.1	0.00017	4.000	0.02440	101	70	130	1.10	20	
1,1-Dichloroethene	4.0	0.00021	4.000	0	99.0	67.6	130	3.29	20	
Trichloroethene (TCE)	3.8	0.00017	4.000	0	95.6	70	130	1.68	20	
Chlorobenzene	4.0	0.00019	4.000	0.03160	99.7	70	130	5.04	20	
Surr: 1,2-Dichloroethane-d4	2.1		2.000		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.0		2.000		102	70	130	0	0	
Surr: Dibromofluoromethane	2.0		2.000		100	70	130	0	0	
Surr: Toluene-d8	2.0		2.000		98.2	70	130	0	0	

^{*} Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

QL Practical Quanitative Limit
S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 1903D14-001Bms SampType: MS TestCode: EPA Method 8270C TCLP Client ID: WDW-1,2,&3 Effluen RunNo: 59132 Batch ID: 44003 Prep Date: 4/1/2019 Analysis Date: 4/13/2019 SeqNo: 1990636 Units: mg/L Analyte PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Result 2-Methylphenol 0.056 0.0063 0.1000 0 56.5 23.9 129 3+4-Methylphenol 0.10 0.0054 0.2000 0 51.9 15 167 0.0058 0 64.4 2,4-Dinitrotoluene 0.064 0.1000 15 147 Hexachlorobenzene 0.073 0.0062 0.1000 0 73.0 41.4 136 Hexachlorobutadiene 0.023 0.0064 0.1000 0 23.4 16.2 134 Hexachloroethane 0.024 0.0060 0.1000 0 23.9 20.6 124 Nitrobenzene 0.059 0.0060 0.1000 0 59.0 39.5 134 Pentachlorophenol 0.033 0.0053 0.1000 0 33.5 15 137 Pyridine 0.016 0.0060 0.1000 0 16.0 15 129 0.070 0.0054 0 70.4 2,4,5-Trichlorophenol 0.1000 15 158 2,4,6-Trichlorophenol 0.069 0.0058 0.1000 0 68.7 15 153 0 Cresols, Total 0.16 0.012 0.3000 53.4 10.6 179 0.085 Surr: 2-Fluorophenol 0.2000 42.3 15 82.5 Surr: Phenol-d5 0.067 0.2000 33.3 15 74.2 Surr: 2,4,6-Tribromophenol 0.14 0.2000 72.0 18.6 118 Surr: Nitrobenzene-d5 0.068 0.1000 67.8 30.4 106 Surr: 2-Fluorobiphenyl 0.046 0.1000 46.3 15 104 Surr: 4-Terphenyl-d14 0.058 0.1000 57.7 15 133

Sample ID: 1903D14-001Bms	sd Samp	Туре: МS	SD	Tes	tCode: El	PA Method	8270C TCLP	·	·	
Client ID: WDW-1,2,&3 EffI	uen Bato	h ID: 440	003	F	RunNo: 5	9132				
Prep Date: 4/1/2019	Analysis I	Date: 4/	13/2019	8	SeqNo: 19	990637	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.049	0.0063	0.1000	0	48.9	23.9	129	14.3	20	
3+4-Methylphenol	0.094	0.0054	0.2000	0	47.0	15	167	9.96	20	
2,4-Dinitrotoluene	0.055	0.0058	0.1000	0	54.9	15	147	16.0	23.2	
Hexachlorobenzene	0.063	0.0062	0.1000	0	62.5	41.4	136	15.5	20	
Hexachlorobutadiene	0.023	0.0064	0.1000	0	23.1	16.2	134	1.38	20	
Hexachloroethane	0.022	0.0060	0.1000	0	21.7	20.6	124	9.57	31.3	
Nitrobenzene	0.054	0.0060	0.1000	0	54.2	39.5	134	8.44	26.6	
Pentachlorophenol	0.028	0.0053	0.1000	0	28.2	15	137	16.9	27.9	
Pyridine	0.021	0.0060	0.1000	0	21.0	15	129	26.8	47.4	
2,4,5-Trichlorophenol	0.058	0.0054	0.1000	0	57.7	15	158	19.7	36.9	
2,4,6-Trichlorophenol	0.062	0.0058	0.1000	0	61.9	15	153	10.4	37.2	
Cresols, Total	0.14	0.012	0.3000	0	47.6	10.6	179	11.5	27.4	
Surr: 2-Fluorophenol	0.072		0.2000		36.0	15	82.5	0	0	
Surr: Phenol-d5	0.057		0.2000		28.6	15	74.2	0	0	
Surr: 2,4,6-Tribromophenol	0.13		0.2000		63.4	18.6	118	0	0	

 $^{* \}qquad \mbox{Value exceeds Maximum Contaminant Level}.$

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903D14

18-Apr-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 1903D14-001Bmsd SampType: MSD TestCode: EPA Method 8270C TCLP

Client ID: WDW-1,2,&3 Effluen Batch ID: 44003 RunNo: 59132

Prep Date: 4/1/2019 Analysis Date: 4/13/2019 SeqNo: 1990637 Units: mg/L

	7 W. G. 19 C. C. 2	u.u. ,	10/2010	_			oo. 111 9 , 2			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	0.062		0.1000		61.7	30.4	106	0	0	
Surr: 2-Fluorobiphenyl	0.041		0.1000		40.8	15	104	0	0	
Surr: 4-Terphenyl-d14	0.049		0.1000		49.1	15	133	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: Ics-1 99.0uS eC SampType: LCS TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R58867 RunNo: 58867

Prep Date: Analysis Date: 4/3/2019 SeqNo: 1978677 Units: µmhos/cm

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Conductivity 99 5.0 99.00 0 100 85 115

Qualifiers:

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

8 % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

Page 10 of 16

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: MB-44137 SampType: MBLK TestCode: EPA Method 7470: Mercury

Client ID: PBW Batch ID: 44137 RunNo: 58933

Prep Date: 4/4/2019 Analysis Date: 4/5/2019 SeqNo: 1981797 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury ND 0.00020

Sample ID: LCS-44137 SampType: LCS TestCode: EPA Method 7470: Mercury

Client ID: LCSW Batch ID: 44137 RunNo: 58933

Prep Date: 4/4/2019 Analysis Date: 4/5/2019 SeqNo: 1981798 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury 0.0043 0.00020 0.005000 0 85.5 80 120

Sample ID: LCSD-44137 SampType: LCSD TestCode: EPA Method 7470: Mercury

Client ID: LCSS02 Batch ID: 44137 RunNo: 58933

Prep Date: 4/4/2019 Analysis Date: 4/5/2019 SeqNo: 1981844 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury 0.0050 0.00020 0.005000 0 99.7 80 120 15.3 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903D14

18-Apr-19

Client: Project:	Navajo Re Quarterly	•		Well							
Sample ID: ME	-A	SampT	Гуре: МЕ	BLK	Tes	tCode: EF	PA Method	6010B: Disso	lved Meta	ıls	
Client ID: PB	N	Batch	h ID: A5	8849	F	RunNo: 58	8849				
Prep Date:		Analysis D)ate: 4/	3/2019	5	SeqNo: 19	978089	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		ND	1.0					J			
Magnesium		ND	1.0								
Potassium		ND	1.0								
Sodium		ND	1.0								
Sample ID: LC	S-A	SampT	Type: LC	s	Tes	tCode: EF	PA Method	6010B: Disso	lved Meta	ıls	
Client ID: LC	SW	Batch	h ID: A5	8849	F	RunNo: 58	8849				
Prep Date:		Analysis D)ate: 4/	3/2019	9	SeqNo: 19	978091	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		50	1.0	50.00	0	99.2	80	120			
Magnesium		50	1.0	50.00	0	99.5	80	120			
Potassium		49	1.0	50.00	0	98.4	80	120			
Sodium		48	1.0	50.00	0	96.3	80	120			
Sample ID: LC	SD-A	SampT	ype: LC	SD	Tes	tCode: EF	PA Method	6010B: Disso	lved Meta	ıls	
Client ID: LC	SS02	Batch	h ID: A5	8849	F	RunNo: 58	8849				
Prep Date:		Analysis D)ate: 4/	3/2019	9	SeqNo: 19	978092	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium				F0.00		400	80	120	1.07	20	
		50	1.0	50.00	0	100	•			20	
Magnesium		50 50	1.0 1.0	50.00	0 0	100	80	120	1.09	20	
Magnesium Potassium					-			120 120	1.09 1.05		
-		50	1.0	50.00	0	101	80			20	
Potassium	3D14-001DMS	50 50 49	1.0 1.0	50.00 50.00 50.00	0 0 0	101 99.4 98.6	80 80 80	120	1.05 2.32	20 20 20	
Potassium Sodium Sample ID: 190	3D14-001DMS W-1,2,&3 Efflue	50 50 49 SampT	1.0 1.0 1.0	50.00 50.00 50.00	0 0 0 0	101 99.4 98.6	80 80 80 PA Method	120 120	1.05 2.32	20 20 20	
Potassium Sodium Sample ID: 190		50 50 49 SampT	1.0 1.0 1.0 Type: M\$	50.00 50.00 50.00	0 0 0 Tes	101 99.4 98.6 tCode: EF	80 80 80 PA Method 8849	120 120	1.05 2.32	20 20 20	
Potassium Sodium Sample ID: 190 Client ID: WI		50 50 49 SampT en Batch	1.0 1.0 1.0 Type: M\$ th ID: A5 Date: 4/	50.00 50.00 50.00 50.00	0 0 0 Tes	101 99.4 98.6 tCode: EF RunNo: 58 SeqNo: 19	80 80 80 PA Method 8849 978153	120 120 6010B: Disso Units: mg/L	1.05 2.32	20 20 20	Qual
Potassium Sodium Sample ID: 190 Client ID: WE Prep Date:		50 50 49 SampT en Batch Analysis D	1.0 1.0 1.0 Type: M\$ th ID: A5 Date: 4/	50.00 50.00 50.00 50.00	0 0 0 Tes	101 99.4 98.6 tCode: EF RunNo: 58 SeqNo: 19	80 80 80 PA Method 8849 978153	120 120 6010B: Disso Units: mg/L	1.05 2.32 olved Meta	20 20 20 20	Qual
Potassium Sodium Sample ID: 190 Client ID: WI Prep Date: Analyte		50 50 49 SampT en Batch Analysis D	1.0 1.0 1.0 Type: M\$ h ID: A5 Date: 4/	50.00 50.00 50.00 50.00 56 8849 73/2019 SPK value	0 0 0 Tes F S	101 99.4 98.6 tCode: EF RunNo: 56 SeqNo: 19 %REC	80 80 80 PA Method 8849 978153 LowLimit	120 120 6010B: Disso Units: mg/L HighLimit	1.05 2.32 olved Meta	20 20 20 20	Qual
Potassium Sodium Sample ID: 190 Client ID: WI Prep Date: Analyte Magnesium Potassium		SampT en Batch Analysis D Result 350 310	1.0 1.0 1.0 Type: MS h ID: A5 Date: 4/	50.00 50.00 50.00 50.00 56 8849 83/2019 SPK value 250.0 250.0	0 0 0 Tes F S SPK Ref Val 100.9 63.59	101 99.4 98.6 tCode: EF RunNo: 58 SeqNo: 19 %REC 101 100	80 80 80 PA Method 8849 978153 LowLimit 75 75	120 120 6010B: Disso Units: mg/L HighLimit 125	1.05 2.32 Plved Meta %RPD	20 20 20 als	Qual
Potassium Sodium Sample ID: 190 Client ID: WE Prep Date: Analyte Magnesium Potassium Sample ID: 190	W-1,2,&3 Efflue	SampT SampT en Batch Analysis D Result 350 310 D SampT	1.0 1.0 1.0 Type: MS th ID: A5 Date: 4/ PQL 5.0 5.0	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00	0 0 0 Tes SPK Ref Val 100.9 63.59	101 99.4 98.6 tCode: EF RunNo: 58 SeqNo: 19 %REC 101 100	80 80 80 PA Method 8849 978153 LowLimit 75 75	120 120 6010B: Disso Units: mg/L HighLimit 125 125	1.05 2.32 Plved Meta %RPD	20 20 20 als	Qual
Potassium Sodium Sample ID: 190 Client ID: WE Prep Date: Analyte Magnesium Potassium Sample ID: 190	W-1,2,&3 Efflue 3D14-001DMSC W-1,2,&3 Efflue	SampT SampT en Batch Analysis D Result 350 310 D SampT	1.0 1.0 1.0 Type: MS th ID: A5 Date: 4/ PQL 5.0 5.0	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00	0 0 0 Tes F SPK Ref Val 100.9 63.59	101 99.4 98.6 tCode: EF RunNo: 56 SeqNo: 19 %REC 101 100	80 80 80 80 8849 978153 LowLimit 75 75 PA Method 8849	120 120 6010B: Disso Units: mg/L HighLimit 125 125	1.05 2.32 Plved Meta %RPD	20 20 20 als	Qual
Potassium Sodium Sample ID: 190 Client ID: WI Prep Date: Analyte Magnesium Potassium Sample ID: 190 Client ID: WI	W-1,2,&3 Efflue 3D14-001DMSC W-1,2,&3 Efflue	SampT en Batch Analysis D Result 350 310 D SampT en Batch	1.0 1.0 1.0 Type: MS th ID: A5 Date: 4/ PQL 5.0 5.0	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00	0 0 0 Tes F SPK Ref Val 100.9 63.59	101 99.4 98.6 tCode: EF RunNo: 58 SeqNo: 19 %REC 101 100 tCode: EF	80 80 80 80 8849 978153 LowLimit 75 75 PA Method 8849	120 120 6010B: Disso Units: mg/L HighLimit 125 125 6010B: Disso	1.05 2.32 Plved Meta %RPD	20 20 20 als	Qual

Qualifiers:

Potassium

Value exceeds Maximum Contaminant Level.

Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

320

5.0

250.0

Value above quantitation range

ND Not Detected at the Reporting Limit

101

Reporting Detection Limit

63.59

Sample container temperature is out of limit as specified at testcode

75

125

0.298

20

Hall Environmental Analysis Laboratory, Inc.

ND

0.52

0.11

0.050

0.0050

0.5000

0.1000

0.0050

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: MB-44006 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals Client ID: PBW Batch ID: 44006 RunNo: 58849 Prep Date: 4/1/2019 Analysis Date: 4/3/2019 SeqNo: 1978079 Units: mg/L SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result PQL LowLimit HighLimit Qual Arsenic ND 0.020 Barium ND 0.020 Cadmium ND 0.0020 Chromium ND 0.0060 Selenium ND 0.050

Sample ID: LCS-44006 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals Client ID: LCSW Batch ID: 44006 RunNo: 58849 Prep Date: 4/1/2019 Analysis Date: 4/3/2019 SeqNo: 1978084 Units: mg/L %RPD Analyte PQL SPK value SPK Ref Val %REC HighLimit **RPDLimit** Result LowLimit Qual Arsenic 0.47 0.020 0.5000 94.0 80 120 0 96.7 80 0.48 0.020 0.5000 120 Barium 0 98.3 Cadmium 0.49 0.0020 0.5000 80 120 Chromium 0.48 0.0060 0.5000 0 96.7 80 120 Selenium 0 99.3 0.50 0.050 0.5000 80 120 Silver 0.10 0.0050 0.1000 0 100 80 120

Sample ID: 1903D14-001EMS SampType: MS TestCode: EPA 6010B: Total Recoverable Metals Batch ID: 44006 Client ID: WDW-1,2,&3 Effluen RunNo: 58849 Prep Date: 4/1/2019 Analysis Date: 4/3/2019 SeqNo: 1978105 Units: mg/L Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte 75 0.49 0.020 0.5000 0.01859 93.7 125 Arsenio Barium 0.50 0.020 0.5000 0.04539 90.9 75 125 0.5000 95.6 75 Cadmium 0.48 0.0020 0 125 Chromium 0.46 0.0060 0.5000 0 91.6 75 125

95.3

101

75

75

125

125

0.04001

0.003795

Sample ID: 1903D14-001EMSD SampType: MSD TestCode: EPA 6010B: Total Recoverable Metals Client ID: WDW-1,2,&3 Effluen Batch ID: 44006 RunNo: 58849 Prep Date: 4/1/2019 Analysis Date: 4/3/2019 SeqNo: 1978106 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Result 0.49 0.020 0.5000 0.01859 94.3 75 125 0.602 20 Arsenic 0.04539 91.6 75 125 20 Barium 0.50 0.020 0.5000 0.717 95.7 75 20 Cadmium 0.48 0.0020 0.5000 0 125 0.0812 Chromium 0.46 0.0060 0.5000 0 91.2 75 125 0.359 20

Qualifiers:

Selenium

Silver

Silver

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 1903D14-001EMSD SampType: MSD TestCode: EPA 6010B: Total Recoverable Metals

Client ID: WDW-1,2,&3 Effluen Batch ID: 44006 RunNo: 58849

Prep Date: 4/1/2019 Analysis Date: 4/3/2019 SeqNo: 1978106 Units: mg/L

PQL SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result LowLimit HighLimit Qual Selenium 0.53 0.050 0.5000 0.04001 97.3 75 125 1.89 20 Silver 0.11 0.0050 0.1000 0.003795 103 75 125 1.41 20

Sample ID: MB-44006 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals

Client ID: PBW Batch ID: 44006 RunNo: 58923

Prep Date: 4/1/2019 Analysis Date: 4/5/2019 SeqNo: 1981494 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Lead ND 0.0050

Sample ID: LCS-44006 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals

Client ID: LCSW Batch ID: 44006 RunNo: 58923

Prep Date: 4/1/2019 Analysis Date: 4/5/2019 SeqNo: 1981495 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Lead 0.51 0.0050 0.5000 0 101 80 120

Sample ID: 1903D14-001EMS SampType: MS TestCode: EPA 6010B: Total Recoverable Metals

Client ID: **WDW-1,2,&3 Effluen** Batch ID: **44006** RunNo: **58923**

Prep Date: 4/1/2019 Analysis Date: 4/5/2019 SegNo: 1981515 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Lead 0.48 0.0050 0.5000 0 95.7 75 125

Sample ID: 1903D14-001EMSD SampType: MSD TestCode: EPA 6010B: Total Recoverable Metals

Client ID: WDW-1,2,&3 Effluen Batch ID: 44006 RunNo: 58923

0.0050

0.48

Prep Date: 4/1/2019 Analysis Date: 4/5/2019 SeqNo: 1981516 Units: mg/L

0.5000

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

96.9

75

125

1.26

Qualifiers:

Lead

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

20

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: mb-1 alk SampType: MBLK TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R58867 RunNo: 58867

Prep Date: Analysis Date: 4/3/2019 SeqNo: 1978652 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) ND 20.00

Sample ID: Ics-1 alk SampType: LCS TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R58867 RunNo: 58867

Prep Date: Analysis Date: 4/3/2019 SeqNo: 1978653 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) 76.56 20.00 80.00 0 95.7 90 110

Qualifiers:

* Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1903D14**

18-Apr-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: MB-44042 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 44042 RunNo: 58866

Prep Date: 4/2/2019 Analysis Date: 4/3/2019 SeqNo: 1978621 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-44042 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 44042 RunNo: 58866

Prep Date: 4/2/2019 Analysis Date: 4/3/2019 SeqNo: 1978622 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids 1030 20.0 1000 0 103 80 120

Qualifiers:

Value exceeds Maximum Contaminant Level.

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

Sample Log-In Check List

NAVAJO REFINING CO Client Name: Work Order Number: 1903D14 RcptNo: 1 rpopin lifnair Laah SBaca Yazmine Garduno Received By: 3/27/2019 8:40:00 AM Completed By: Leah Baca 3/27/2019 1:57:18 PM 3/29/19 Reviewed By: 6 3/29/ Chain of Custody No 🔲 1. Is Chain of Custody complete? Yes 🗸 Not Present 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? No 🗌 NA 🗌 Yes 🗸 No 🗌 4. Were all samples received at a temperature of >0° C to 6.0°C NA 🗌 5. Sample(s) in proper container(s)? Yes 🗸 No Yes 🗸 No 🗌 6. Sufficient sample volume for indicated test(s)? 7. Are samples (except VOA and ONG) properly preserved? Yes 🗸 No Yes No 🗸 8. Was preservative added to bottles? NA 🔲 9. VOA vials have zero headspace? Yes 🗸 No No VOA Vials Yes \square 10. Were any sample containers received broken? No 🗸 # of preserved bottles checked Yes 🗸 No 🗌 for pH: 11. Does paperwork match bottle labels? nless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 12. Are matrices correctly identified on Chain of Custody? Yes 🗸 13. Is it clear what analyses were requested? Yes 🗸 No 🗌 14. Were all holding times able to be met? Yes 🗸 No 🗌 (If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes NA 🗸 No 🔲 Person Notified: Date By Whom: eMail Phone Fax Via: In Person Regarding: Client Instructions: 16. Additional remarks: 17. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 0.1 Good Yes

	RONMENTAL		6																		,		Time &: UREmarks: Send results to Scott Denton, Mike Holder, Robert Combs and Randy Dade. 7.32 PH 31.0 °C	2 4
			Albuquerque, NM 87109	505-345-4107	Analysis Request	μe	₅ 9 A	CE	04/	oly oly	o 's	TCLP Metal 261/ SW-84											ı, Mike Holder, Ro	
	HALL ENVI Anai ysts	www hallen	1			100	O, etals) NOS	r92 hd (sil b	art Mt bed	R p	R,C,I/40 CF Metals/S _W -2 7470 (see a		×			×						S to Scott Dentor	
			4901 Hawkins NE	Tel. 505-3	-6.0	Г	04Z8	28 b ('sC	thoo thoo	əM ″ts M 8	949 11 P6 840	Cation/anion VOCs/SW-8 SVOCs/SW (see attache (see attache			×	×							ks: Send result	
						CI,		FI,	"pu	COI	'Ho	Specific Gra SO4, TDS, I	×										Remarks: Sen Dade. 7.12	
	□ Rush		Quarterly WDW-1, 2, & 3 Inj Well	251841				Scott Denton / Randy Dade		% D	()	ative HEAL No.	SO4 - GUI	733	2003		-						Date Time 5:4	
d Time:		ne:	/DW-1, 2	.0. # 25′		nager:			J	□ Yes	nperature	Preservative Type	Neat/H2SO4	HN03	HCL	Neat	Neat						300	
Turn-Around Time:	X Standar	Project Name:	Quarterly M	Project #: P.O. #		Project Manager:		Robert Combs /	Sampler:	On Ice:	Sample Temperature:	Container Type and #	3	-	3	2	2			J.			Received by:	
Chain-of-Custody Record			Mailing Address: P.O. Box 159 Artesia,			1		□ Level 4 (Full Validation)				Sample Request ID	WDW-1, 2, & 3 Effluent					*	Relinquished by: Bracy Hussard Social Maller	ed by:				
of-Cu	ning Co.		.O. Box 1		3311	-746-545						Matrix	Liquid	Liquid	Liquid	Liquid	Liquid						Relinquish	Relinquished by:
hain	vajo Refi		dress: P	-0159	575-748-	ax#: 575	:kage:	5		ype)		Time	8:15	8:15	8:15	8:15	8:15						Time: \$: 00	Time:
J	Client: Navajo Refining Co.		Mailing Ac	NM 88211-0159	Phone #: 575-748-3311	email or Fax#: 575-746-5451	QA/QC Package:	□ Standard	□ Other	□ EDD (Type)		Date	3/26/19	3/26/19	3/26/19	3/26/19	3/26/19					252.0	Date: 3∙36∙19	Date:

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



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

July 17, 2019

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159

TEL: (575) 748-3311

FAX:

RE: Quarterly WDW 1 2 3 Inj Well OrderNo.: 1907003

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/28/2019 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 #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **1907003**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/17/2019

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1, 2 & 3 Effluent

Project: Quarterly WDW 1 2 3 Inj Well

Collection Date: 6/26/2019 2:30:00 PM

Lab ID: 1907003-001 **Matrix:** AQUEOUS **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C TCLP						Analyst	: DAM
2-Methylphenol	ND	200		mg/L	1	7/5/2019 2:00:31 PM	45933
3+4-Methylphenol	ND	200		mg/L	1	7/5/2019 2:00:31 PM	45933
2,4-Dinitrotoluene	ND	0.13		mg/L	1	7/5/2019 2:00:31 PM	45933
Hexachlorobenzene	ND	0.13		mg/L	1	7/5/2019 2:00:31 PM	45933
Hexachlorobutadiene	ND	0.50		mg/L	1	7/5/2019 2:00:31 PM	45933
Hexachloroethane	ND	3.0		mg/L	1	7/5/2019 2:00:31 PM	45933
Nitrobenzene	ND	2.0		mg/L	1	7/5/2019 2:00:31 PM	45933
Pentachlorophenol	ND	100		mg/L	1	7/5/2019 2:00:31 PM	45933
Pyridine	ND	5.0		mg/L	1	7/5/2019 2:00:31 PM	45933
2,4,5-Trichlorophenol	ND	400		mg/L	1	7/5/2019 2:00:31 PM	45933
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	7/5/2019 2:00:31 PM	45933
Cresols, Total	ND	200		mg/L	1	7/5/2019 2:00:31 PM	45933
Surr: 2-Fluorophenol	63.5	15-82.5		%Rec	1	7/5/2019 2:00:31 PM	45933
Surr: Phenol-d5	46.8	15-74.2		%Rec	1	7/5/2019 2:00:31 PM	45933
Surr: 2,4,6-Tribromophenol	83.3	18.6-118		%Rec	1	7/5/2019 2:00:31 PM	45933
Surr: Nitrobenzene-d5	87.2	30.4-106		%Rec	1	7/5/2019 2:00:31 PM	45933
Surr: 2-Fluorobiphenyl	77.3	15-104		%Rec	1	7/5/2019 2:00:31 PM	45933
Surr: 4-Terphenyl-d14	78.0	15-133		%Rec	1	7/5/2019 2:00:31 PM	45933
SPECIFIC GRAVITY						Analyst	: JRR
Specific Gravity	1.002	0			1	7/2/2019 10:32:00 AM	R61110
EPA METHOD 300.0: ANIONS						Analyst	smb
Fluoride	23	2.0	*	mg/L	20	7/1/2019 3:42:01 PM	R61084
Chloride	570	50	*	mg/L	100	7/10/2019 2:28:41 PM	R61309
Bromide	0.59	0.50		mg/L	5	7/1/2019 3:29:36 PM	R61084
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	7/1/2019 3:29:36 PM	R61084
Sulfate	2300	50	*	mg/L	100	7/10/2019 2:28:41 PM	R61309
Nitrate+Nitrite as N	1.2	1.0		mg/L	5	7/1/2019 3:54:26 PM	R61084
SM2510B: SPECIFIC CONDUCTANCE						Analyst	: JRR
Conductivity	6100	5.0		µmhos/c	1	7/1/2019 10:22:40 PM	R61065
SM2320B: ALKALINITY						Analyst	: JRR
Bicarbonate (As CaCO3)	537.6	20.00		mg/L Ca	1	7/1/2019 10:22:40 PM	R61065
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	7/1/2019 10:22:40 PM	R61065
Total Alkalinity (as CaCO3)	537.6	20.00		mg/L Ca	1	7/1/2019 10:22:40 PM	R61065
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst	: CJS
Total Dissolved Solids	4570	40.0	*D	mg/L	1	7/9/2019 2:54:00 PM	45992
SM4500-H+B / 9040C: PH						Analyst	: JRR

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

Qualifiers:

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

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

Page 1 of 11

Lab Order **1907003**

Date Reported: 7/17/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1, 2 & 3 Effluent

 Project:
 Quarterly WDW 1 2 3 Inj Well
 Collection Date: 6/26/2019 2:30:00 PM

 Lab ID:
 1907003-001
 Matrix: AQUEOUS
 Received Date: 6/28/2019 10:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500-H+B / 9040C: PH						Analyst:	JRR
pH	7.80		Н	pH units	1	7/1/2019 10:22:40 PM	R61065
EPA METHOD 7470: MERCURY						Analyst:	rde
Mercury	ND	0.00020		mg/L	1	7/11/2019 4:43:47 PM	46125
EPA METHOD 6010B: DISSOLVED METALS						Analyst:	bcv
Calcium	470	5.0		mg/L	5	7/3/2019 11:45:32 AM	A61162
Magnesium	140	5.0		mg/L	5	7/3/2019 11:45:32 AM	A61162
Potassium	69	5.0		mg/L	5	7/3/2019 11:45:32 AM	A61162
Sodium	640	10		mg/L	10	7/3/2019 12:00:27 PM	A61162
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	bcv
Arsenic	ND	0.020		mg/L	1	7/5/2019 10:53:46 AM	46005
Barium	0.048	0.020		mg/L	1	7/5/2019 10:03:23 AM	46005
Cadmium	ND	0.0020		mg/L	1	7/5/2019 10:03:23 AM	46005
Chromium	ND	0.0060		mg/L	1	7/5/2019 10:03:23 AM	46005
Lead	ND	0.0050		mg/L	1	7/5/2019 10:03:23 AM	46005
Selenium	ND	0.050		mg/L	1	7/5/2019 10:03:23 AM	46005
Silver	0.0053	0.0050		mg/L	1	7/5/2019 10:03:23 AM	46005
TCLP VOLATILES BY 8260B						Analyst:	RAA
Benzene	ND	0.50		mg/L	200	7/9/2019 4:50:00 AM	T61220
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	200	7/9/2019 4:50:00 AM	T61220
2-Butanone	ND	200		mg/L	200	7/9/2019 4:50:00 AM	T61220
Carbon Tetrachloride	ND	0.50		mg/L	200	7/9/2019 4:50:00 AM	T61220
Chloroform	ND	6.0		mg/L	200	7/9/2019 4:50:00 AM	T61220
1,4-Dichlorobenzene	ND	7.5		mg/L	200	7/9/2019 4:50:00 AM	T61220
1,1-Dichloroethene	ND	0.70		mg/L	200	7/9/2019 4:50:00 AM	T61220
Tetrachloroethene (PCE)	ND	0.70		mg/L	200	7/9/2019 4:50:00 AM	T61220
Trichloroethene (TCE)	ND	0.50		mg/L	200	7/9/2019 4:50:00 AM	T61220
Vinyl chloride	ND	0.20		mg/L	200	7/9/2019 4:50:00 AM	T61220
Chlorobenzene	ND	100		mg/L	200	7/9/2019 4:50:00 AM	T61220
Surr: 1,2-Dichloroethane-d4	114	70-130		%Rec	200	7/9/2019 4:50:00 AM	T61220
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	200	7/9/2019 4:50:00 AM	T61220
Surr: Dibromofluoromethane	104	70-130		%Rec	200	7/9/2019 4:50:00 AM	T61220
Surr: Toluene-d8	93.6	70-130		%Rec	200	7/9/2019 4:50:00 AM	T61220

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

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

Page 2 of 11

Analytical Report

Lab Order **1907003**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/17/2019

CLIENT: Navajo Refining Company Client Sample ID: TRIP BLANK

Project: Quarterly WDW 1 2 3 Inj Well Collection Date:

Lab ID: 1907003-002 **Matrix:** TRIP BLANK **Received Date:** 6/28/2019 10:40:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
TCLP VOLATILES BY 8260B					Analys	: RAA
Benzene	ND	0.50	mg/L	1	7/9/2019 5:14:00 AM	T61220
1,2-Dichloroethane (EDC)	ND	0.50	mg/L	1	7/9/2019 5:14:00 AM	T61220
2-Butanone	ND	200	mg/L	1	7/9/2019 5:14:00 AM	T61220
Carbon Tetrachloride	ND	0.50	mg/L	1	7/9/2019 5:14:00 AM	T61220
Chloroform	ND	6.0	mg/L	1	7/9/2019 5:14:00 AM	T61220
1,4-Dichlorobenzene	ND	7.5	mg/L	1	7/9/2019 5:14:00 AM	T61220
1,1-Dichloroethene	ND	0.70	mg/L	1	7/9/2019 5:14:00 AM	T61220
Tetrachloroethene (PCE)	ND	0.70	mg/L	1	7/9/2019 5:14:00 AM	T61220
Trichloroethene (TCE)	ND	0.50	mg/L	1	7/9/2019 5:14:00 AM	T61220
Vinyl chloride	ND	0.20	mg/L	1	7/9/2019 5:14:00 AM	T61220
Chlorobenzene	ND	100	mg/L	1	7/9/2019 5:14:00 AM	T61220
Surr: 1,2-Dichloroethane-d4	112	70-130	%Rec	1	7/9/2019 5:14:00 AM	T61220
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	7/9/2019 5:14:00 AM	T61220
Surr: Dibromofluoromethane	105	70-130	%Rec	1	7/9/2019 5:14:00 AM	T61220
Surr: Toluene-d8	94.0	70-130	%Rec	1	7/9/2019 5:14:00 AM	T61220

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

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

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

1907003-001F WDW-1,2&3 EFFLUENT

Collected date/time: 06/26/19 14:30

SAMPLE RESULTS - 01

L1114999

ONE LAB. NATIONWIDE.



Wet Chemistry by Method 4500 CN E-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/I		mg/I		date / time	
Reactive Cyanide	0.0269		0.00500	1	07/09/2019 20:24	WG1308181



Wet Chemistry by Method 4500H+ B-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
Corrosivity by pH	7.47	<u>T8</u>	1	07/06/2019 11:52	WG1306715



Sample Narrative:

L1114999-01 WG1306715: 7.47 at 20.8C



Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/I		mg/I		date / time	 -
Reactive Sulfide	ND		0.0500	1	07/03/2019 19:54	<u>WG1305508</u>



Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>	Ī
Analyte	deg F			date / time		_
Flashpoint	DNF at 170		1	07/09/2019 12:16	WG1308093	

1907003-001G WDW-1,2&3 EFFLUENT

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

Collected date/time: 06/26/19 14:30

Wet Chemistry by Method 2580

-	Result	Qualifier	Dilution	Analysis	Batch
Analyte	mV	\(\frac{1}{2} = \frac{1}{2} \text{\$1}		date / time	
ORP	50.0	T8	1	07/13/2019 10:12	WG1310279





















QUALITY CONTROL SUMMARY	L1114999-02
WG1310279	Wet Chemistry by Method 2580

L1114999-02 Original Sample (OS) • Duplicate (DUP)

DUP RPD Limits	%	20
DUP Qualifier		
DUP RPD	%	7.69
Dilution		-
DUP Result	MΛ	54.0
Original Result	MΛ	50.0
	Analyte	ORP
	DUP RPD DUP Qualifier	Dilution DUP RPD <u>DUP Qualifier</u> %

SS

C

S

D

d

Sc

DATE/TIME: 07/15/19 16:04

SDG: L1114999

PROJECT:

Hall Environmental Analysis Laboratory

		ts LCS Qualifier		
		Rec. Limits	%	95.7-104
		LCS Rec.	96	100
(S2)		LCS Result	ΛШ	228
rol Sample (LC	3/19 10:12	Spike Amount LCS Result	ΛШ	228
Laboratory Control Sample (LCS)	(LCS) R3430311-1 07/13/19 10:12		Analyte	ORP

WG1308181 Wet Chemistry by Method 4500 CN E-2011	d 4500 CN	E-2011		ar	QUALITY	ITY CONTROL		SUMMARY	>			ONE LAB. NATIONWIDE.	*
Method Blank (MB)													
(MB) R3429064-1 07/09/19 19:47	19:47	MD Outline	ON ON	i d									
Analyte	mg/l		mg/l	mB RDL mg/l									2 TC
Reactive Cyanide	D.		0.00180	0.00500									8
L1111966-04 Original Sample (OS) • Duplicate (DUP)	Sample (C	JS) • Dupli	cate (DUP)										N 4
(OS) L1111966-04 07/09/19 19:53 • (DUP) R3429064-3 07/09/19 19:54	3:53 • (DUP) R	3429064-3 0	7/09/19 19:54										5
3	Original Result DUP Result	DUP Result	Dilution DUP	DUP RPD DUF	DUP Qualifier Lin	DUP RPD Limits							មា
Analyte	mg/l	l/gm	%		96								ঠ
Reactive Cyanide	П	0.000	1 0.000	00	20								် လ လ
L1112351-03 Original Sample (OS) • Duplicate (DUP)	Sample (C)S) • Duplic	sate (DUP)										10/2
(OS) L1112351-03 07/09/19 20:06 • (DUP) R3429064-6 07/09/19 20:07	0:06 · (DUP) F	3429064-6 (77/09/19 20:07	7									5
5	Original Result DUP Result	DUP Result	Dilution DUP	DUP RPD DUP	DUP Qualifier Lin	DUP RPD Limits							S
Analyte	mg/I	mg/l	%		96								
Reactive Cyanide	QN	0.000	1 0.000	00	20								°Sc
(2) () alamaS lanta (10)		Q											
(LCS) R3429064-9 07/09/19 20:18	20:18												
S	nount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier								
Analyte	mg/l	mg/l	5 8	96									
Reactive Cyanide 0	0.100	0.110	110	85.0-115									
L1112351-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)	Sample (C)S) • Matrix	Spike (MS	s) • Matrix !	Spike Dup	licate (MSD							
(OS) L1112351-02 07/09/19 20:03 (MS) R3429064-4 07/09/19 20:04 (MSD) R3429064-5 07/09/19 20:05	0:03 • (MS) R3	3429064-4 07	7/09/19 20:04	· (MSD) R3429	064-5 07/09/	19 20:05							
Analyte T	Spike Amount mg/l	Original Result MS Result mg/l mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %	
Reactive Cyanide 0	0.100	QN	0.107	0.0924	107	92.4	-	75.0-125			14.6	20	
L1113239-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)	Sample (C)S) • Matrix	Spike (MS	3) • Matrix §	Spike Dup	licate (MSD							
(OS) L1113239-01 07/09/19 20:15 • (MS) R3429064-7 07/09/19 20:16 • (MSD) R3429064-8 07/09/19 20:17 Solike Amount Original Result MS Result MSD Result MS Rec.	20:15 • (MS) R3	07/09/19 20:10 Original Result MS Result	/09/19 20:16 • (MS Result	(MSD) R34290 MSD Result	64-8 07/09/19 MS Rec.	9 20:17 MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte		l/gm	l/gm	l/gm	96	96		96			%	96	
Reactive Cyanide 0	0.100	ND	0.105	0.0832	105	83.2	-	75.0-125		13	23.2	20	
ACCOUNT: Hall Environmental Analysis Laboratory	ACCOUNT: nental Analysis Labor	atory		PRO	PROJECT:		S	SDG: L1114999		DATE/TIME: 07/15/19 16:04	TIME: 16:04		

WG1306715

Wet Chemistry by Method 4500H+ B-2011

Laboratory Control Sample (LCS)

(LCS) R3428109-1 07/06/19 11:52

Rec. Limits 99.0-101 LCS Rec. 99.5 Spike Amount LCS Result 9.95 10.0 Su Corrosivity by pH Analyte

LCS Qualifier

Sample Narrative:

LCS: 9.95 at 22.8C

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

SS

CL

S

Ū

<

SC

PROJECT:

DATE/TIME: 07/15/19 16:04

SDG: L1114999

Hall Environmental Analysis Laboratory

ONE LAB, NATIONWIDE. QUALITY CONTROL SUMMARY L1114999-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD) (OS) L1114999-01 07/03/19 19:54 (MS) R3427441-5 07/03/19 19:54 (MSD) R3427441-6 07/03/19 19:55 LCS Qualifier Rec. Limits 85.0-115 MB RDL 0.0500 I/gm LCS Rec. 0.00650 MB MDL l/gm 109 MB Qualifier Spike Amount LCS Result 0.543 Wet Chemistry by Method 9034-9030B Laboratory Control Sample (LCS) MB Result (LCS) R3427441-2 07/03/19 19:48 0.500 (MB) R3427441-1 07/03/19 19:48 l/gm I/gm Method Blank (MB) WG1305508 Reactive Sulfide Reactive Sulfide Analyte Analyte

C

S

 $\overline{\mathbb{O}}$

RPD Limits % 20

RPD

MSD Qualifier

MS Qualifier

Rec. Limits

Dilution

MSD Rec.

MS Rec.

MSD Result

Spike Amount Original Result MS Result

80.0-120

94.2

92.7

0.942 I/gm

0.927

Q

Reactive Sulfide Analyte

l/gm

mg/l

l/gm 1.00

1.61

Sc

SS

WG1308093 Wet Chemistry by Method D93/1010A

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L1114968-01 Original Sample (OS) • Duplicate (DUP)

į	
ļ	
l	
l	
ı	
l	
l	
l	9
ŀ	5.
ı	3
ı	-
ì	0
l	-
ı	0
ı	0
ŧ	\leq
ı	7
l	0
ı	
ı	2
ı	~
ı	~
ı	22
ı	8
ı	w
ı	CA
ı	4
١	(1)
ı	œ
	0
ı	느
ı	$_{-}$
	_
	•
	S
	-
	N
	-
	0
	5,
	3
	9
	9
	_
	0
	=
	ب
	က်
	in
	ĕ
	ET.
	4
	=
	-
	IS) L1114968-01 07/09/19 12:16 • (DUP) R3428833-2 07/09/19 12:16

	DUP RPD Limits	96	10
	DUP Qualifier		
:16	Dilution DUP RPD	%	0.000
07/09/19 12	Dilution		-
3428833-2	DUP Result	deg F	DNF at 170
19 12:16 • (DUP) R3	Original Result DUP Result	deg F	DNF at 170
(OS) L1114968-01 07/09/19 12:16 • (DUP) R3428833-2 07/09/19 12:16		Analyte	Flashpoint

Analyte	deg F	deg F		9%	96	
Flashpoint	DNF at 170	DNF at 170	-	0.000	10	
Laboratory Control Sample (LCS)	Sample (LC	(52)				
(LCS) R3428833-1 07/09/19 12:16	9 12:16					1
	Spike Amount LCS Result	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	
Analyte	deg F	deg F	96	%		
Flashpoint	82.0	83.8	102	96.0-104		

⁴U

S

Sc

Œ

 $\overline{\triangleleft}$

SS

DATE/TIME: 07/15/19 16:04

SDG: L1114999



Guide to Reading and Understanding Your Laboratory Report

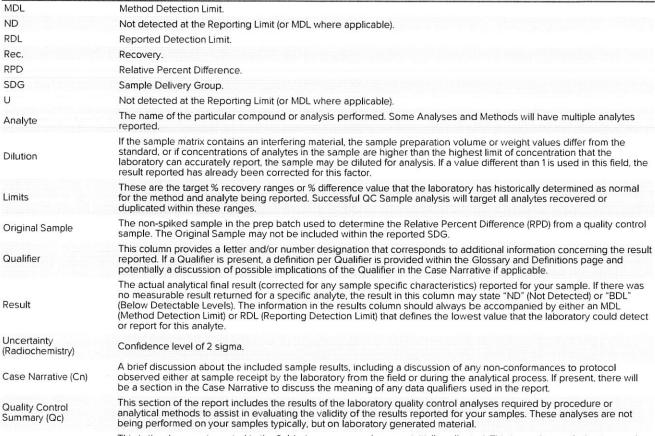
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Ss

Cn

Sr

Abbreviations and Definitions





This is the document created in the field when your samples were initially collected. This is used to verify the time and

Sample Chain of Custody (Sc)

date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.

Sample Results (Sr)

This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.

Sample Summary (Ss)

This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifi

Description

33		-		
	١.	=	ï	
~		۳		

The associated batch QC was outside the established quality control range for precision.

T8

Sample(s) received past/too close to holding time expiration.

Hall Environmental Analysis Laboratory, Inc.

9.8

0.50

10.00

WO#: **1907003**

17-Jul-19

·	Refining Co y WDW 12		Well							
Sample ID: MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID: PBW	Batch ID: R61084			RunNo: 61084						
Prep Date:	Analysis D	Date: 7/	1/2019	5	SeqNo: 2	069013	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								
Sample ID: LCS	SampT	ype: LC	s	Tes	tCode: El	PA Method	300.0: Anions	3		
Client ID: LCSW	Batch ID: R61084			RunNo: 61084						
Prep Date:	Analysis D	Date: 7/	1/2019	5	SeqNo: 2	069014	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.4	90	110			
Bromide	2.4	0.10	2.500	0	95.6	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.9	90	110			
Nitrate+Nitrite as N	3.4	0.20	3.500	0	96.8	90	110			
Sample ID: MB	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	300.0: Anions	3		
Client ID: PBW	Batch	n ID: R6	1309	F	RunNo: 6	1309				
Prep Date:	Analysis D	Date: 7/	10/2019	S	SeqNo: 2	078288	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								
Sample ID: LCS	SampT	ype: LC	:s	Tes	tCode: El	PA Method	300.0: Anions			
Client ID: LCSW	Batch	n ID: R6	1309	F	RunNo: 6	1309				
Prep Date:	Analysis D	Date: 7/	10/2019	9	SeqNo: 2	078289	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.9	90	110			

Qualifiers:

Sulfate

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

98.2

90

110

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

0

Hall Environmental Analysis Laboratory, Inc.

ND

ND

ND

0.011

0.010

0.011

0.0093

0.50

0.20

100

0.01000

0.01000

0.01000

0.01000

WO#: **1907003**

17-Jul-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: 100ng lcs2	Samp	Type: LC :	S	Tes	tCode: T 0	CLP Volatile	es by 8260B			
Client ID: LCSW	Bato	ch ID: T6 1	1220	R	RunNo: 6	1220				
Prep Date:	Analysis	Date: 7/ 9	9/2019	S	SeqNo: 2	075609	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.022	0.00017	0.02000	0	109	70	130			
1,1-Dichloroethene	0.020	0.00021	0.02000	0	98.0	70	130			
Trichloroethene (TCE)	0.020	0.00017	0.02000	0	102	70	130			
Chlorobenzene	0.020	0.00019	0.02000	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	0.012		0.01000		117	70	130			
Surr: 4-Bromofluorobenzene	0.010		0.01000		102	70	130			
Surr: Dibromofluoromethane	0.011		0.01000		111	70	130			
Surr: Toluene-d8	0.0095		0.01000		94.9	70	130			
Sample ID: rb2	Samp	Туре: МВ	BLK	Tes	tCode: T (CLP Volatile	es by 8260B			
Sample ID: rb2 Client ID: PBW		Type: MB			tCode: T (es by 8260B			
•	Bato		1220	R		1220	es by 8260B Units: mg/L			
Client ID: PBW	Bato	ch ID: T6 1	1220 9/2019	R	RunNo: 6	1220	-	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte	Bato Analysis	ch ID: T6 1 Date: 7/ 9	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date:	Bato Analysis Result	ch ID: T6 1 Date: 7/ 9	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Benzene	Bato Analysis Result ND	Date: 7/9 PQL 0.50	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Benzene 1,2-Dichloroethane (EDC)	Bate Analysis Result ND ND	PQL 0.50 0.50	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Benzene 1,2-Dichloroethane (EDC) 2-Butanone	Analysis Result ND ND ND	PQL 0.50 0.50 200	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Benzene 1,2-Dichloroethane (EDC) 2-Butanone Carbon Tetrachloride Chloroform	Analysis Result ND ND ND ND ND	PQL 0.50 0.50 0.50 0.50	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Benzene 1,2-Dichloroethane (EDC) 2-Butanone Carbon Tetrachloride	Analysis Result ND ND ND ND ND ND ND ND ND N	PQL 0.50 0.50 200 0.50 6.0	1220 9/2019	R S	RunNo: 6 SeqNo: 2	1220 075612	Units: mg/L	%RPD	RPDLimit	Qual

Qualifiers:

Trichloroethene (TCE)

Surr: Toluene-d8

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Vinyl chloride

Chlorobenzene

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

B Analyte detected in the associated Method Blank

114

99.7

107

93.2

70

70

70

70

130

130

130

130

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907003**

17-Jul-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: Ics-1 99.8uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R61065 RunNo: 61065

Prep Date: Analysis Date: 7/1/2019 SeqNo: 2068823 Units: µmhos/cm

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Conductivity 99 5.0 99.80 0 99.6 85 115

Sample ID: Ics-2 99.8uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R61065 RunNo: 61065

Prep Date: Analysis Date: 7/1/2019 SeqNo: 2068863 Units: µmhos/cm

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Conductivity 100 5.0 99.80 0 102 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907003**

17-Jul-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: MB-46125 SampType: MBLK TestCode: EPA Method 7470: Mercury

Client ID: PBW Batch ID: 46125 RunNo: 61319

Prep Date: 7/11/2019 Analysis Date: 7/11/2019 SeqNo: 2078629 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury ND 0.00020

Sample ID: LCS-46125 SampType: LCS TestCode: EPA Method 7470: Mercury

Client ID: LCSW Batch ID: 46125 RunNo: 61319

Prep Date: 7/11/2019 Analysis Date: 7/11/2019 SeqNo: 2078630 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 99.6 80 120

Sample ID: 1907003-001EMS SampType: MS TestCode: EPA Method 7470: Mercury

Client ID: WDW-1, 2 & 3 Efflue Batch ID: 46125 RunNo: 61319

Prep Date: 7/11/2019 Analysis Date: 7/11/2019 SeqNo: 2078632 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury 0.0048 0.00020 0.005000 .00005580 94.2 75 125

Sample ID: 1907003-001EMSD SampType: MSD TestCode: EPA Method 7470: Mercury

Client ID: WDW-1, 2 & 3 Efflue Batch ID: 46125 RunNo: 61319

Prep Date: 7/11/2019 Analysis Date: 7/11/2019 SeqNo: 2078633 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury 0.0045 0.00020 0.005000 .00005580 89.7 75 125 4.84 20

Qualifiers:

Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 7 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907003**

17-Jul-19

Client: Navajo Refining Company
Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: MB-A SampType: MBLK TestCode: EPA Method 6010B: Dissolved Metals Client ID: PBW Batch ID: A61162 RunNo: 61162 Prep Date: Analysis Date: 7/3/2019 SeqNo: 2072741 Units: mg/L Analyte PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Result Calcium ND 1.0 Magnesium ND 1.0

 Potassium
 ND
 1.0

 Sodium
 ND
 1.0

 Sample ID: LCS-A
 SampType: LCS
 TestCode: EPA Method 6010B: Dissolved Metals

 Client ID: LCSW
 Batch ID: A61162
 RunNo: 61162

 Prep Date:
 Analysis Date: 7/3/2019
 SegNo: 2072742
 Units: mg/l

Prep Date:	Analysis D	ate: 7/	3/2019	S	SeqNo: 20	072742	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.5	80	120			
Magnesium	49	1.0	50.00	0	97.1	80	120			
Potassium	48	1.0	50.00	0	96.8	80	120			
Sodium	49	1.0	50.00	0	98.5	80	120			

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

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

Client:

Hall Environmental Analysis Laboratory, Inc.

Navajo Refining Company

WO#: **1907003**

17-Jul-19

Project: Quarte	rly WDW 1 2 3 Inj Well						
Sample ID: MB-46005	SampType: MBLK	TestCode: EPA 6010B: Total Recoverable Metals					
Client ID: PBW	Batch ID: 46005	RunNo: 61169					
Prep Date: 7/3/2019	Analysis Date: 7/5/2019	SeqNo: 2073329 Units: mg/L					
Analyte	Result PQL SPK va	alue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual				
Barium	ND 0.020						
Cadmium	ND 0.0020						
Chromium	ND 0.0060						
Lead	ND 0.0050						
Selenium	ND 0.050						
Silver	ND 0.0050						
Sample ID: LCS-46005	SampType: LCS	TestCode: EPA 6010B: Total Recoverable Metals					
Client ID: LCSW	Batch ID: 46005	RunNo: 61169					
Prep Date: 7/3/2019	Analysis Date: 7/5/2019	SeqNo: 2073330 Units: mg/L					
Analyte	Result PQL SPK va	alue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual				
Barium	0.48 0.020 0.5	000 0 95.9 80 120					
Cadmium	0.50 0.0020 0.5	000 0 100 80 120					
Chromium	0.49 0.0060 0.5	000 0 99.0 80 120					
Lead	0.49 0.0050 0.5	000 0 97.9 80 120					
Selenium	0.48 0.050 0.5	000 0 95.9 80 120					
Silver	0.10 0.0050 0.1	000 0 101 80 120					
Sample ID: MB-46005	SampType: MBLK	TestCode: EPA 6010B: Total Recoverable Metals					
Client ID: PBW	Batch ID: 46005	RunNo: 61169					
Prep Date: 7/3/2019	Analysis Date: 7/5/2019	SeqNo: 2073365 Units: mg/L					
Analyte	Result PQL SPK va	alue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual				
Arsenic	ND 0.020						
Sample ID: LCS-46005	SampType: LCS	TestCode: EPA 6010B: Total Recoverable Metals					
Client ID: LCSW	Batch ID: 46005	RunNo: 61169					
Prep Date: 7/3/2019	Analysis Date: 7/5/2019	SeqNo: 2073366 Units: mg/L					

Qualifiers:

Analyte

Arsenic

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

Result

0.51

PQL

0.020

0.5000

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

HighLimit

120

%RPD

RPDLimit

Qual

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

SPK value SPK Ref Val %REC LowLimit

RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907003**

17-Jul-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: mb-1 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R61065 RunNo: 61065

Prep Date: Analysis Date: 7/1/2019 SeqNo: 2068770 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) ND 20.00

Sample ID: Ics-1 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R61065 RunNo: 61065

Prep Date: Analysis Date: 7/1/2019 SeqNo: 2068771 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) 75.24 20.00 80.00 0 94.1 90 110

Sample ID: mb-2 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R61065 RunNo: 61065

Prep Date: Analysis Date: 7/1/2019 SeqNo: 2068793 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) ND 20.00

Sample ID: Ics-2 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R61065 RunNo: 61065

Prep Date: Analysis Date: 7/1/2019 SeqNo: 2068794 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) 77.60 20.00 80.00 0 97.0 90 110

Qualifiers:

Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 10 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907003**

17-Jul-19

Client: Navajo Refining Company

Project: Quarterly WDW 1 2 3 Inj Well

Sample ID: MB-45992 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 45992 RunNo: 61248

Prep Date: **7/3/2019** Analysis Date: **7/9/2019** SeqNo: **2076089** 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-45992 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 45992 RunNo: 61248

Prep Date: 7/3/2019 Analysis Date: 7/9/2019 SeqNo: 2076090 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids 988 20.0 1000 0 98.8 80 120

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 11 of 11



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: NA	AVAJO REFINING CO	Work Order Num	ber: 1907003		RcptNo: 1					
Received By: J	evon Campisi	6/28/2019 10:40:00	O AM	Juan Campisi						
Completed By: L	eah Baca	7/1/2019 6:52:49 A	M	Jun Campisi L. 1 Base						
Reviewed By:	JU 101-1	9		Load Julia						
Chain of Custoo	<u>dy</u>									
1. Is Chain of Custo	dy complete?		Yes 🗸	· No 🗌	Not Present					
2. How was the sam	ple delivered?		Courier							
Log In										
and the second s	nade to cool the samples	5?	Yes 🗸	No 🗌	NA 🗆					
4. Were all samples	received at a temperatur	re of >0° C to 6.0°C	Yes 🗸	No 🗌	NA 🗆					
5. Sample(s) in prop	er container(s)?		Yes 🗸	No 🗌						
6. Sufficient sample	volume for indicated test	(s)?	Yes 🗸	No 🗌						
7. Are samples (exce	ept VOA and ONG) prope	erly preserved?	Yes 🗸	No 🗌						
8. Was preservative	added to bottles?		Yes 🗌	No 🗸	NA 🗌					
9. VOA vials have ze	ro headspace?		Yes 🗸	No 🗌	No VOA Vials					
10. Were any sample	containers received brol	ken?	Yes	No 🗸						
					# of preserved bottles checked					
 Does paperwork m (Note discrepancie 	natch bottle labels? es on chain of custody)		Yes 🗸	No 🗌	for pH: 3					
	ctly identified on Chain of	of Custody?	Yes 🗸	No 🗆	(<2.6 >12 unless noted					
	llyses were requested?	· Cuctody .	Yes 🗹	No 🗆						
14. Were all holding tir			Yes 🗹	No 🗆	Checked by: LB					
Special Handling	(if applicable)									
15. Was client notified	of all discrepancies with	n this order?	Yes	No 🗌	NA 🗹					
Person Notif	fied:	Date	r							
By Whom:		Via:	eMail P	hone Fax	In Person					
Regarding:					The second secon					
Client Instru	ctions:									
16. Additional remark	S:									
7. Cooler Informati	on									
A STATE OF THE PARTY OF THE PAR	the state of the s	Seal Intact Seal No	Seal Date	Signed By						
1 0.2		es	Jour Date	oigned by						

	ENVIRONMENTAL YSTS LABORATORY	mo	7109	77								6									Remarks: Send results to Scott Denton, Mike Holder, Robert Combs and Randy Dade. F. Jo Lot Aleta: 15.	Lind: SSW 15 mph
		ents	Albuquerque, NM 87109	Fax 505-345-4107	Analysis Request	art	Ч Ы:	CE	po 0 1/	leth only	0 's	TCLP Metal 261/ SW-84 Chlordane 8	×		_						, Mike Holde	
	ANALYSIS	www.hallen			1	(,s	etals	F09	bd sil b	yeq:	846 Hac	Metals/SW- 7470 (see a Ca, K, Mg, I		×							Scott Denton	1.7%
			4901 Hawkins NE	Tel. 505-345-3975			0728	('sC s bo	SAC	' ts M 8	1 be	VOCs/SW-E			×	×	×				Send results to	7.24 pt, 4
							04	EP\'	nd., Br,	100 3 ., £	,Hq	Specific Gra SO4, TDS, Cation/anior	×		^			,			Remarks: Dade.	-
90			Inj Well					Robert Combs / Scott Denton / Randy Dade		ON D	1.2% +0.0CF=0,2	(not frezen) HEAL NO.	100-				-}				- Date Time 6-25-(9 10:4C	Date Time
d Time:	□ Rush	ie:	Quarterly WDW-1, 2, & 3 Inj Well	0. # 251841		ager:		bs / Scott Der	,	₽ Yes	nperature: - C	Preservative Type	Neat/H2SO4	HN03	HCL	Neat	Neat				Courie	
Turn-Around Time:	X Standar	Project Name:	Quarterly W	Project #: P.O. #		Project Manager:		Robert Com	Sampler:		Sample Temperature: -	Container Type and #	က	_	ო	2	2				Received by:	Received by:
Chain-of-Custody Record			59 Artesia,					☐ Level 4 (Full Validation)				, Sample Request ID	WDW-1, 2, & 3 Effluent				end of History	ed by: [
-of-Cu	fining Co.		Mailing Address: P.O. Box 159 Artesia,		-3311	email or Fax#: 575-746-5451						Matrix	Liquid	Liquid	Liquid	Liquid	Liquid				Relinguished by:	Relinquished by:
Shain	avajo Ret		ddress: F	1-0159	575-748	-ax#: 57£	ckage:	ard		Type)		Time	2:30	2:30	2:30	2:30	2:30				Time:)-/9 /0:00	Time:
J	Client: Navajo Refining Co.		Mailing A	NM 88211-0159	Phone #: 575-748-3311	email or F	QA/QC Package:	□ Standard	□ Other	□ EDD (Type)		Date	6/26/19	6/26/19	6/26/19	6/26/19	6/26/19				Date: 6.31/19	Date:

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



The written notice shall be signed by both the Permittee and transferee, include an acknowledgment by the transferee that they will be responsible for compliance with the permit upon taking possession of the facility; set a specific date for transfer of the permit and include information related to the transferee's financial responsibility as required by 20.6.2.5210B(17) NMAC.

1.1. Compliance and Enforcement. If the Permittee violates any condition of this permit, OCD may issue a compliance order requiring compliance immediately or within a specified time period, and/or assess a civil penalty, or both (74-6-10 NMSA 1978). The compliance order may also include a suspension or termination of this permit. OCD may also commence a civil action in district court for appropriate relief, including injunctive relief (74-6-10(A)(2) NMSA 1978). The Permittee may be subject to criminal penalties for discharging a water contaminant without a permit or in violation of a condition of a permit; making any false material statement, representation, certification or omission of material fact in a renewal application, record, report, plan or other document filled, submitted or required to be maintained under the Water Quality Act; falsifying, tampering with or rendering inaccurate any monitoring device, method or record required to be maintained under the Water Quality Act; or falling to monitor, sample or report as required by a discharge permit issued pursuant to a state or federal law or regulation (74-6-10.2 NMSA 1978).

2. GENERAL FACILITY OPERATIONS

2.A. Quarterly Monitoring Requirements. The Permittee shall properly conduct operations at its facility by injecting only RCRA exempt and RCRA non-hazardous, non-exempt oil field waste fluids. Injected waste fluids shall not exhibit the toxicity characteristics of ignitability, reactivity, corrosivity, or toxicity under 40 CFR 261 Subpart "C" 261.21 – 261.24 (July 1, 1992), at the point of injection into WDW-1 based upon environmental analytical laboratory testing and/or monitoring data results. Pursuant to 20.6.2.5207B, the Permittee shall provide analyses of the injected fluids at least quarterly to yield data representative of their toxicity characteristics. OCD shall be notified via a C-141 Form release report if waste fluids test positive for the above.

The Permittee shall also analyze the injected fluids quarterly for the following characteristics:

- pH as determined by Method 9040
- Eh
- Specific conductance
- Specific gravity
- Temperature
- Concentrations of major dissolved cations and anions, including: fluoride, calcium, potassium, magnesium, sodium bicarbonate, carbonate, chloride, sulfate, bromide, total dissolved solids, and cation/anion balance using the methods specified in 40 CFR 136.3
- RCRA Characteristics for ignitability (ASTM Methods), corrosivity (SW-846), and reactivity (determined through Permittee's application of knowledge or generating process)

The Permittee shall also analyze the injected fluids quarterly for the constituents identified in the Quarterly Monitoring List below to demonstrate that the injected fluids do not exhibit the characteristic of toxicity using the Toxicity Characteristic Leaching Procedure, EPA SW-846 Test Method 1311 (see Table 1, 40 CFR 261.24(b)).

	QUARTERLY MONITORING LIST										
EPA Hazardous Waste No.	Conteminant	SW-846 Method	Regulatory Level (mg/l)								
D004	Arsenic	1311	5.0								
D005	Barium	1311	100.0								
D018	Benzene	8021B	0.5								
D006	Cadmium	1311	1.0								
D019	Carbon tetrachloride	8021B 8260B	0.5								
D020	Chlordane	8081A	0.03								

UICI-8-1 Injection Well WDW-1 Remit Renewal December 11, 2017 Page 4 of 8

D021	Chlorobenzene	8021B	100.0
D022	Chland	8260B	
DULL	Chloroform	8021B	6.0
D007	Chromium	8260B	
D023	o-Cresol	1311	5.0
D024	m-Cresol	8270D	200.0
D025		8270D	200.0
D026	p-Cresol	8270D	200.0
D027	Cresol	8270D	200.0
UUZI	1,4-Dichlorobenzene	8021B	7.5
		8121	
		8260B	
D028	10 000	8270D	
5020	1,2-Dichloroethane	8021B	0.5
D029	4.4 Diable 1	8260B	
0028	1,1-Dichloroethylene	8021B	0.7
0030	0.15: //	8260B	
2030	2,4-Dinitrotoluene	8091	0.13
0032		8270D	
0033	Hexachiorobenzene	8121	0.13
<i>J</i> 033	Hexachlorobutadiene	8021B	0.5
		8121	
0034		8260B	
0034 0008	Hexachloroethane	8121	3.0
	Lead	1311	5.0
9009	Mercury	7470A	0.2
		7471B	V.2.
0035	Methyl ethyl ketone	8015B	200.0
222		8260B	200.0
036	Nitrobenzene	8091	2.0
		8270D	2.0
037	Pentrachlorophenol	8041	100.0
9038	Pyridine	8260B	5.0
		8270D	0.0
010	Selenium	1311	1.0
011	Silver	1311	5.0
039	Tetrachloroethylene	8260B	0.7
040	Trichloroethylene	8021B	0.5
	-	8260B	0.5
041	2,4,5-Trichlorophenol	8270D	400.0
042	2,4,6-Trichlorophenol	8041A	2.0
	155	8270D	2.0
043	Vinyl chloride	8021B	0.2
	STREET ST	8260B	U.Z

If o., m., and p-cresol concentrations cannot be differentiated, then the total cresol concentration is used.

If the quantitation limit is greater than the regulatory level, then the quantitation limit becomes the regulatory level, if dissolved metals, EPA Method 1311 TCLP is required with the exception of total mercury.

2.B. Groundwater Monitoring Wells. At least one groundwater monitoring well shall be installed in proximity of and hydrogeologically downgradient from WDW-1. The monitoring well(s) shall be screened into the uppermost water-bearing unit using 15 feet of well screen with the top of the screened interval positioned 5 feet above the water table. The Permittee shall propose a monitoring frequency with analytic and monitoring parameters to detect potential groundwater contamination.

Shallow ter 200 - 250 flys

New All



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

OrderNo.: 1910144

November 01, 2019

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

FAX

RE: Quarterly WDW-1, 2, & 3 Inj Well

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/2/2019 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 #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109



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

WO#: **1910144**Date: **11/1/2019**

CLIENT: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Analytical Notes Regarding EPA Method 8270:

The recovery of pyridine in the LCS was low when compared to our SOP limits.

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/1/2019

CLIENT:Navajo Refining CompanyClient Sample ID: WDW-1,2,&3 EffluentProject:Quarterly WDW-1, 2, & 3 Inj WellCollection Date: 9/30/2019 4:05:00 PMLab ID:1910144-001Matrix: AQUEOUSReceived Date: 10/2/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: CJS
Fluoride	31	2.0	*	mg/L	20	10/3/2019 11:52:11 PM
Chloride	430	25	*	mg/L	50	10/14/2019 2:16:22 PM
Bromide	ND	0.50		mg/L	5	10/3/2019 11:39:50 PM
Phosphorus, Orthophosphate (As P)	ND	2.5	Н	mg/L	5	10/3/2019 11:39:50 PM
Sulfate	1700	25	*	mg/L	50	10/14/2019 2:16:22 PM
Nitrate+Nitrite as N	1.2	1.0		mg/L	5	10/4/2019 12:16:52 AM
EPA METHOD 7470: MERCURY						Analyst: rde
Mercury	ND	0.020		mg/L	1	10/4/2019 3:15:56 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: rde
Calcium	340	10		mg/L	10	10/30/2019 1:32:00 PM
Magnesium	110	10		mg/L	10	10/30/2019 1:32:00 PM
Potassium	100	10		mg/L	10	10/30/2019 1:32:00 PM
Sodium	570	10		mg/L	10	10/30/2019 1:32:00 PM
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: bcv
Arsenic	ND	5.0		mg/L	5	10/21/2019 2:24:21 PM
Barium	ND	100		mg/L	5	10/14/2019 11:43:53 AM
Cadmium	ND	1.0		mg/L	5	10/14/2019 11:43:53 AM
Chromium	ND	5.0		mg/L	5	10/14/2019 11:43:53 AM
Lead	ND	5.0		mg/L	5	10/21/2019 2:24:21 PM
Selenium	ND	1.0		mg/L	5	10/14/2019 11:43:53 AM
Silver	ND	5.0		mg/L	5	10/14/2019 11:43:53 AM
EPA METHOD 8270C TCLP						Analyst: DAM
2-Methylphenol	ND	200		mg/L	1	10/14/2019 6:38:07 PM
3+4-Methylphenol	ND	200		mg/L	1	10/14/2019 6:38:07 PM
2,4-Dinitrotoluene	ND	0.13		mg/L	1	10/14/2019 6:38:07 PM
Hexachlorobenzene	ND	0.13		mg/L	1	10/14/2019 6:38:07 PM
Hexachlorobutadiene	ND	0.50		mg/L	1	10/14/2019 6:38:07 PM
Hexachloroethane	ND	3.0		mg/L	1	10/14/2019 6:38:07 PM
Nitrobenzene	ND	2.0		mg/L	1	10/14/2019 6:38:07 PM
Pentachlorophenol	ND	100		mg/L	1	10/14/2019 6:38:07 PM
Pyridine	ND	5.0		mg/L	1	10/14/2019 6:38:07 PM
2,4,5-Trichlorophenol	ND	400		mg/L	1	10/14/2019 6:38:07 PM
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	10/14/2019 6:38:07 PM
Cresols, Total	ND	200		mg/L	1	10/14/2019 6:38:07 PM
Surr: 2-Fluorophenol	42.6	15-82.5		%Rec	1	10/14/2019 6:38:07 PM
Surr: Phenol-d5	34.0	15-74.2		%Rec	1	10/14/2019 6:38:07 PM
Surr: 2,4,6-Tribromophenol	51.3	18.6-118		%Rec	1	10/14/2019 6:38:07 PM

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

Qualifiers:

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

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

Page 2 of 22

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/1/2019

CLIENT: Navajo Refining Company
Client Sample ID: WDW-1,2,&3 Effluent
Project: Quarterly WDW-1, 2, & 3 Inj Well
Collection Date: 9/30/2019 4:05:00 PM
Lab ID: 1910144-001
Matrix: AQUEOUS
Received Date: 10/2/2019 9:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8270C TCLP					Analyst: DAM
Surr: Nitrobenzene-d5	64.8	30.4-106	%Rec	1	10/14/2019 6:38:07 PM
Surr: 2-Fluorobiphenyl	53.0	15-104	%Rec	1	10/14/2019 6:38:07 PM
Surr: 4-Terphenyl-d14	61.1	15-133	%Rec	1	10/14/2019 6:38:07 PM
NOTES:					
* See the case narrative for notes.					
TCLP VOLATILES BY 8260B					Analyst: JMR
Benzene	ND	0.50	mg/L	1	10/4/2019 4:16:04 AM
1,2-Dichloroethane (EDC)	ND	0.50	mg/L	1	10/4/2019 4:16:04 AM
2-Butanone	ND	200	mg/L	1	10/4/2019 4:16:04 AM
Carbon Tetrachloride	ND	0.50	mg/L	1	10/4/2019 4:16:04 AM
Chloroform	ND	6.0	mg/L	1	10/4/2019 4:16:04 AM
1,4-Dichlorobenzene	ND	7.5	mg/L	1	10/4/2019 4:16:04 AM
1,1-Dichloroethene	ND	0.70	mg/L	1	10/4/2019 4:16:04 AM
Tetrachloroethene (PCE)	ND	0.70	mg/L	1	10/4/2019 4:16:04 AM
Trichloroethene (TCE)	ND	0.50	mg/L	1	10/4/2019 4:16:04 AM
Vinyl chloride	ND	0.20	mg/L	1	10/4/2019 4:16:04 AM
Chlorobenzene	ND	100 70-130	mg/L %Rec	1	10/4/2019 4:16:04 AM
Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene	88.0 93.4	70-130 70-130	%Rec	1 1	10/4/2019 4:16:04 AM 10/4/2019 4:16:04 AM
Surr: Dibromofluoromethane	93.4 98.6	70-130 70-130	%Rec	1	10/4/2019 4:16:04 AM
Surr: Toluene-d8	104	70-130	%Rec	1	10/4/2019 4:16:04 AM
CORROSIVITY		70 100	701100		Analyst: PAC
pH	7.69		su	1	10/6/2019
·	7.09		Su	'	
IGNITABILITY METHOD 1010					Analyst: PAC
Ignitability	>170		°F	1	10/14/2019
OXIDATION REDUCTION POTENTIAL					Analyst: PAC
Oxidation-Reduction Potential	190		mV	1	10/6/2019
CYANIDE, REACTIVE					Analyst: PAC
Cyanide, Reactive	0.0927	0.00500	mg/L	1	10/15/2019
SULFIDE, REACTIVE					Analyst: PAC
Reactive Sulfide	ND	0.050	mg/L	1	10/7/2019
SM2510B: SPECIFIC CONDUCTANCE					Analyst: JRR
Conductivity	5100	5.0	µmhos/c	1	10/7/2019 11:56:48 AM
SM2320B: ALKALINITY					Analyst: JRR
Bicarbonate (As CaCO3)	408.2	20.00	mg/L Ca	1	10/3/2019 5:57:44 PM

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

Qualifiers:

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

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

Page 3 of 22

Analytical ReportLab Order **1910144**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/1/2019

CLIENT: Navajo Refining Company
Client Sample ID: WDW-1,2,&3 Effluent
Project: Quarterly WDW-1, 2, & 3 Inj Well
Collection Date: 9/30/2019 4:05:00 PM
Lab ID: 1910144-001
Matrix: AQUEOUS
Received Date: 10/2/2019 9:30:00 AM

Analyses	Result	RL Qua	l Units DF	Date Analyzed
SM2320B: ALKALINITY				Analyst: JRR
Carbonate (As CaCO3)	ND	2.000	mg/L Ca 1	10/3/2019 5:57:44 PM
Total Alkalinity (as CaCO3)	408.2	20.00	mg/L Ca 1	10/3/2019 5:57:44 PM
SPECIFIC GRAVITY				Analyst: JRR
Specific Gravity	1.000	0	1	10/10/2019 12:45:00 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS				Analyst: KS
Total Dissolved Solids	3520	40.0 *E) mg/L 1	10/7/2019 2:22:00 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

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

Analytical ReportLab Order **1910144**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/1/2019

CLIENT: Navajo Refining Company Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, & 3 Inj Well Collection Date:

Lab ID: 1910144-002 **Matrix:** TRIP BLANK **Received Date:** 10/2/2019 9:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
TCLP VOLATILES BY 8260B					Analyst: JMR
Benzene	ND	0.50	mg/L	1	10/4/2019 5:42:29 AM
1,2-Dichloroethane (EDC)	ND	0.50	mg/L	1	10/4/2019 5:42:29 AM
2-Butanone	ND	200	mg/L	1	10/4/2019 5:42:29 AM
Carbon Tetrachloride	ND	0.50	mg/L	1	10/4/2019 5:42:29 AM
Chloroform	ND	6.0	mg/L	1	10/4/2019 5:42:29 AM
1,4-Dichlorobenzene	ND	7.5	mg/L	1	10/4/2019 5:42:29 AM
1,1-Dichloroethene	ND	0.70	mg/L	1	10/4/2019 5:42:29 AM
Tetrachloroethene (PCE)	ND	0.70	mg/L	1	10/4/2019 5:42:29 AM
Trichloroethene (TCE)	ND	0.50	mg/L	1	10/4/2019 5:42:29 AM
Vinyl chloride	ND	0.20	mg/L	1	10/4/2019 5:42:29 AM
Chlorobenzene	ND	100	mg/L	1	10/4/2019 5:42:29 AM
Surr: 1,2-Dichloroethane-d4	91.6	70-130	%Rec	1	10/4/2019 5:42:29 AM
Surr: 4-Bromofluorobenzene	93.8	70-130	%Rec	1	10/4/2019 5:42:29 AM
Surr: Dibromofluoromethane	100	70-130	%Rec	1	10/4/2019 5:42:29 AM
Surr: Toluene-d8	101	70-130	%Rec	1	10/4/2019 5:42:29 AM

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

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions Client ID: PBW Batch ID: R63431 RunNo: 63431 Prep Date: Analysis Date: 10/3/2019 SeqNo: 2166069 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result HighLimit Qual Fluoride ND 0.10 Bromide ND 0.10 Phosphorus, Orthophosphate (As P ND 0.50 Nitrate+Nitrite as N ND 0.20

Sample ID: LCS SampType: Ics TestCode: EPA Method 300.0: Anions Client ID: LCSW Batch ID: R63431 RunNo: 63431 Prep Date: Analysis Date: 10/3/2019 SeqNo: 2166070 Units: mg/L POI SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual Analyte Result LowLimit Fluoride 0.54 0.10 0.5000 0 108 90 110 0 98.5 2.5 0.10 2.500 90 110 **Bromide** Phosphorus, Orthophosphate (As P 4.7 0.50 5.000 0 94.8 90 110 Nitrate+Nitrite as N 0 99.8 3.5 0.20 3.500 90 110

Sample ID: MB SampType: MBLK TestCode: EPA Method 300.0: Anions Client ID: PBW Batch ID: R63681 RunNo: 63681 Prep Date: Analysis Date: 10/14/2019 SeqNo: 2176160 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result HighLimit Qual Chloride ND 0.50 Sulfate ND 0.50

Sample ID: LCS SampType: LCS TestCode: EPA Method 300.0: Anions Client ID: LCSW Batch ID: R63681 RunNo: 63681 Prep Date: Analysis Date: 10/14/2019 SeqNo: 2176161 Units: mg/L PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual Chloride 5.0 0.50 5.000 0 99.4 90 110 0 Sulfate 10 0.50 10.00 101 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

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: 100ng Ics	SampT	ype: LC	S	Tes	tCode: T (CLP Volatil				
Client ID: LCSW	Batch	Batch ID: T63413			RunNo: 6	3413				
Prep Date:	Analysis D	Analysis Date: 10/4/2019			SeqNo: 2	165302	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.0	0.30	4.000	0	99.0	70	130			
1,1-Dichloroethene	3.7	0.30	4.000	0	91.8	70	130			
Trichloroethene (TCE)	3.7	0.30	4.000	0	91.3	70	130			
Chlorobenzene	4.2	0.30	4.000	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	1.8		2.000		89.9	70	130			
Surr: 4-Bromofluorobenzene	1.9		2.000		96.3	70	130			
Surr: Dibromofluoromethane	2.0		2.000		97.7	70	130			
Surr: Toluene-d8	2.1		2.000		103	70	130			

Sample ID: 1910144-001a m	s SampT	ype: MS	3	Tes	tCode: T0	CLP Volatil	es by 8260B			
Client ID: WDW-1,2,&3 Eff	luen Batch	n ID: T6	3413	F	RunNo: 6 :	3413				
Prep Date:	Analysis D	ate: 10	0/4/2019	5	SeqNo: 2	165304	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.0	0.30	4.000	0.1900	95.7	70	130			
1,1-Dichloroethene	3.7	0.30	4.000	0	92.9	70	130			
Trichloroethene (TCE)	3.5	0.30	4.000	0	87.0	70	130			
Chlorobenzene	4.1	0.30	4.000	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	1.8		2.000		91.0	70	130			
Surr: 4-Bromofluorobenzene	1.8		2.000		88.4	70	130			
Surr: Dibromofluoromethane	2.0		2.000		99.4	70	130			
Surr: Toluene-d8	2.1		2.000		106	70	130			

Sample ID: 1910144-001a mse	ample ID: 1910144-001a msd SampType: MSD						TestCode: TCLP Volatiles by 8260B					
Client ID: WDW-1,2,&3 Efflu	en Batch	1D: T6	3413	F	RunNo: 6							
Prep Date:	SeqNo: 2165305 Units: mg/L											
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	3.9	0.30	4.000	0.1900	93.1	70	130	2.64	20			
1,1-Dichloroethene	3.6	0.30	4.000	0	89.0	70	130	4.24	20			
Trichloroethene (TCE)	3.4	0.30	4.000	0	85.3	70	130	2.00	20			
Chlorobenzene	4.0	0.30	4.000	0	100	70	130	1.70	20			
Surr: 1,2-Dichloroethane-d4	1.8		2.000		90.5	70	130	0	0			
Surr: 4-Bromofluorobenzene	1.8		2.000		91.4	70	130	0	0			
Surr: Dibromofluoromethane	2.0		2.000		99.6	70	130	0	0			
Surr: Toluene-d8	2.1		2.000		103	70	130	0	0			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 7 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: rb2	SampT	уре: МЕ	BLK	Tes	tCode: T	CLP Volatile				
Client ID: PBW	Batch	n ID: T6 :	3413	F	RunNo: 6	3413				
Prep Date:	Analysis D	Analysis Date: 10/4/2019			SeqNo: 2165310			Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
1,2-Dichloroethane (EDC)	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,1-Dichloroethene	ND	0.70								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Chlorobenzene	ND	100								
Surr: 1,2-Dichloroethane-d4	1.9		2.000		95.2	70	130			
Surr: 4-Bromofluorobenzene	1.9		2.000		93.5	70	130			
Surr: Dibromofluoromethane	2.0		2.000		99.0	70	130			
Surr: Toluene-d8	2.0		2.000		101	70	130			

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

WO#: 19

1910144 *01-Nov-19*

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: 1910144-001bms SampType: MS TestCode: EPA Method 8270C TCLP Client ID: WDW-1,2,&3 Effluen RunNo: 63667 Batch ID: 47936 Prep Date: 10/4/2019 Analysis Date: 10/14/2019 SeqNo: 2175826 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Result S 2-Methylphenol 0.14 0.0010 0.1000 0 135 30.5 98.2 3+4-Methylphenol 0.30 0.0010 0.2000 0 149 27.4 98.6 S 0 140 34.3 87.4 S 2,4-Dinitrotoluene 0.14 0.0010 0.1000 S Hexachlorobenzene 0.15 0.0010 0.1000 0 146 36.5 100 S Hexachlorobutadiene 0.12 0.0010 0.1000 0 124 15 108 Hexachloroethane 0.11 0.0010 0.1000 0 113 15 90.7 S Nitrobenzene 0.14 0.0010 0.1000 0 144 39 100 S Pentachlorophenol 0.12 0.0010 0.1000 0 124 15 97.5 S Pyridine 0.022 0.0010 0.1000 0 22.5 15 65.8 0.0010 0 137 36.1 109 S 2,4,5-Trichlorophenol 0.14 0.1000 2,4,6-Trichlorophenol 0.14 0.0010 0.1000 0 138 37.8 104 S 0 S 0.43 0.0010 0.3000 145 27.1 99.8 Cresols, Total 0.096 48.0 Surr: 2-Fluorophenol 0.2000 15 82.5 Surr: Phenol-d5 0.076 0.2000 37.9 15 74.2 Surr: 2,4,6-Tribromophenol 0.14 0.2000 67.6 18.6 118 Surr: Nitrobenzene-d5 0.080 0.1000 79.9 30.4 106 Surr: 2-Fluorobiphenyl 0.066 0.1000 66.3 15 104 Surr: 4-Terphenyl-d14 0.071 0.1000 70.6 15 133

Sample ID: 1910144-001bmsd	I Samp	Туре: МЅ	SD	Tes	tCode: EF	PA Method	8270C TCLP			
Client ID: WDW-1,2,&3 Efflu	en Bato	ch ID: 479	936	F	RunNo: 6	3667				
Prep Date: 10/4/2019	Analysis	Date: 10)/14/2019	S	SeqNo: 2	175827	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.065	0.0010	0.1000	0	65.2	30.5	98.2	69.7	44.3	R
3+4-Methylphenol	0.13	0.0010	0.2000	0	63.1	27.4	98.6	81.2	50	R
2,4-Dinitrotoluene	0.068	0.0010	0.1000	0	67.6	34.3	87.4	69.9	45.1	R
Hexachlorobenzene	0.067	0.0010	0.1000	0	67.3	36.5	100	73.8	47.2	R
Hexachlorobutadiene	0.059	0.0010	0.1000	0	58.9	15	108	71.4	43.4	R
Hexachloroethane	0.055	0.0010	0.1000	0	54.9	15	90.7	69.6	39.2	R
Nitrobenzene	0.071	0.0010	0.1000	0	71.2	39	100	67.6	42.1	R
Pentachlorophenol	0.057	0.0010	0.1000	0	57.0	15	97.5	74.4	50	R
Pyridine	0.0028	0.0010	0.1000	0	2.80	15	65.8	156	50	RS
2,4,5-Trichlorophenol	0.070	0.0010	0.1000	0	70.0	36.1	109	65.0	49.7	R
2,4,6-Trichlorophenol	0.069	0.0010	0.1000	0	69.3	37.8	104	66.6	47	R
Cresols, Total	0.19	0.0010	0.3000	0	63.8	27.1	99.8	77.5	27.4	R
Surr: 2-Fluorophenol	0.046		0.2000		23.2	15	82.5	0	0	
Surr: Phenol-d5	0.038		0.2000		18.9	15	74.2	0	0	
Surr: 2,4,6-Tribromophenol	0.061		0.2000		30.6	18.6	118	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 9 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: 1910144-001bmsd SampType: MSD TestCode: EPA Method 8270C TCLP

Client ID: WDW-1,2,&3 Effluen Batch ID: 47936 RunNo: 63667

Prep Date: 10/4/2019 Analysis Date: 10/14/2019 SeqNo: 2175827 Units: mg/L

10.00	. , .						- · · · · · · · · · · · · · · · · · · ·			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	0.036		0.1000		36.4	30.4	106	0	0	
Surr: 2-Fluorobiphenyl	0.034		0.1000		33.9	15	104	0	0	
Surr: 4-Terphenyl-d14	0.031		0.1000		31.1	15	133	0	0	

Sample ID: Ics-47936	Samp	Type: LC	S	Tes	tCode: El	PA Method	8270C TCLP			
Client ID: LCSW	Bato	ch ID: 479	936	F	RunNo: 6	3667				
Prep Date: 10/4/2019	Analysis	Date: 10)/14/2019	9	SeqNo: 2	175828	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.14	0.0010	0.1000	0	139	33.8	121			S
3+4-Methylphenol	0.33	0.0010	0.2000	0	163	33.6	109			S
2,4-Dinitrotoluene	0.14	0.0010	0.1000	0	144	50.4	124			S
Hexachlorobenzene	0.15	0.0010	0.1000	0	152	50.1	120			S
Hexachlorobutadiene	0.12	0.0010	0.1000	0	116	16.1	103			S
Hexachloroethane	0.11	0.0010	0.1000	0	112	15	94.2			S
Nitrobenzene	0.15	0.0010	0.1000	0	150	32.4	125			S
Pentachlorophenol	0.12	0.0010	0.1000	0	124	44.6	114			S
Pyridine	0.0031	0.0010	0.1000	0	3.08	15	67			S
2,4,5-Trichlorophenol	0.15	0.0010	0.1000	0	147	49.4	118			S
2,4,6-Trichlorophenol	0.16	0.0010	0.1000	0	160	50.3	116			S
Cresols, Total	0.46	0.0010	0.3000	0	155	33.8	109			S
Surr: 2-Fluorophenol	0.10		0.2000		50.0	15	82.5			
Surr: Phenol-d5	0.083		0.2000		41.6	15	74.2			
Surr: 2,4,6-Tribromophenol	0.14		0.2000		67.6	18.6	118			
Surr: Nitrobenzene-d5	0.081		0.1000		81.2	30.4	106			
Surr: 2-Fluorobiphenyl	0.073		0.1000		73.2	15	104			
Surr: 4-Terphenyl-d14	0.075		0.1000		74.8	15	133			

Sample ID: mb-47936	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8270C TCLP			
Client ID: PBW	Batch	1D: 47 9	936	F	RunNo: 6	3667				
Prep Date: 10/4/2019	Analysis D	ate: 10)/14/2019	5	SeqNo: 2	175829	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 10 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: mb-47936	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8270C TCLP			
Client ID: PBW	Batch	1D: 47 9	936	F	RunNo: 6	3667				
Prep Date: 10/4/2019	Analysis D	ate: 10	0/14/2019	9	SeqNo: 2	175829	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.11		0.2000		53.1	15	82.5			
Surr: Phenol-d5	0.086		0.2000		42.9	15	74.2			
Surr: 2,4,6-Tribromophenol	0.15		0.2000		73.7	18.6	118			
Surr: Nitrobenzene-d5	0.076		0.1000		75.6	30.4	106			
Surr: 2-Fluorobiphenyl	0.071		0.1000		70.9	15	104			
Surr: 4-Terphenyl-d14	0.080		0.1000		80.0	15	133			

NOTES:

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

^{*}See the case narrative for notes.

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: Ics-1 99.8uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R63466 RunNo: 63466

Prep Date: Analysis Date: 10/7/2019 SeqNo: 2168649 Units: µmhos/cm

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Conductivity 98 5.0 99.80 0 98.7 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 12 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-47939 SampType: MBLK TestCode: EPA Method 7470: Mercury

Client ID: PBW Batch ID: 47939 RunNo: 63437

Prep Date: 10/4/2019 Analysis Date: 10/4/2019 SeqNo: 2166383 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury ND 0.00020

Sample ID: LCS-47939 SampType: LCS TestCode: EPA Method 7470: Mercury

Client ID: LCSW Batch ID: 47939 RunNo: 63437

Prep Date: 10/4/2019 Analysis Date: 10/4/2019 SeqNo: 2166384 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 99.0 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

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 13 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-A SampType: MBLK TestCode: EPA Method 6010B: Dissolved Metals Client ID: PBW Batch ID: A64097 RunNo: 64097 Prep Date: Analysis Date: 10/30/2019 SeqNo: 2192808 Units: mg/L Analyte PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Result Calcium ND 1.0 Magnesium ND 1.0 Potassium ND 1.0 Sodium ND 1.0

Sample ID: LCS-A TestCode: EPA Method 6010B: Dissolved Metals SampType: LCS Client ID: LCSW Batch ID: A64097 RunNo: 64097 Prep Date: Analysis Date: 10/30/2019 SeqNo: 2192809 Units: mg/L PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual Calcium 52 1.0 50.00 0 104 80 120 50.00 0 104 80 52 1.0 120 Magnesium Potassium 52 1.0 50.00 0 103 80 120 50 50.00 0 101 80 120 Sodium 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
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

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

Hall Environmental Analysis Laboratory, Inc.

ND

ND

0.050

0.0050

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-47925	Samp	SampType: MBLK			TestCode: EPA 6010B: Total Recoverable Metals						
Client ID: PBW	Bato	Batch ID: 47925			RunNo: 6	3528					
Prep Date: 10/3/2019	Analysis	Date: 10	0/8/2019	8	SeqNo: 2	170148	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	ND	0.020									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Lead	ND	0.0050									
Selenium	ND	0.050									
Silver	ND	0.0050									

Sample ID: LCS-47925	SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals									
Client ID: LCSW	Bato	ch ID: 47	925	F	RunNo: 6	3528				
Prep Date: 10/3/2019	Analysis	Date: 10	0/8/2019	\$	SeqNo: 2	170150	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.020	0.5000	0	92.6	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.6	80	120			
Chromium	0.47	0.0060	0.5000	0	94.4	80	120			
Lead	0.48	0.0050	0.5000	0	95.5	80	120			
Selenium	0.48	0.050	0.5000	0	96.3	80	120			
Silver	0.092	0.0050	0.1000	0	92.2	80	120			

Sample ID: MB-47925	Samp	Туре: МЕ	BLK	Tes	tCode: El	PA 6010B:	Total Recove	rable Meta	als		
Client ID: PBW	Bato	ch ID: 47	925	F	RunNo: 6	3528					
Prep Date: 10/3/2019	Analysis	Date: 10)/8/2019	5	SeqNo: 2	170241	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	ND	0.020									
Cadmium	ND	0.0020									
	IND	0.0020									

Sample ID: LCS-47925	•	Type: LC					Total Recover	able Meta	ils	
Client ID: LCSW		Batch ID: 47925 RunNo: 63528 sis Date: 10/8/2019 SeqNo: 2170243								
Prep Date: 10/3/2019	Analysis	Date: 10	/8/2019	S	SeqNo: 2	170243	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.020	0.5000	0	94.0	80	120			
Cadmium	0.48	0.0020	0.5000	0	96.4	80	120			
Chromium	0.48	0.0060	0.5000	0	95.2	80	120			
Selenium	0.47	0.050	0.5000	0	93.5	80	120			
Silver	0.093	0.0050	0.1000	0	93.2	80	120			

Qualifiers:

Selenium

Silver

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

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

Page 15 of 22

Hall Environmental Analysis Laboratory, Inc.

ND

0.0050

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-47925	Samp	Type: ME	BLK	Tes	tCode: El	PA 6010B:	Total Recover	rable Meta	als	
Client ID: PBW	Bato	ch ID: 47	925	F	RunNo: 6	3528				
Prep Date: 10/3/2019	Analysis	Date: 10	0/8/2019	5	SeqNo: 2	170263	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID: LCS-47925	SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals									
Client ID: LCSW	Bato	ch ID: 479	925	F	RunNo: 6	3528				
Prep Date: 10/3/2019	Analysis	Date: 10)/8/2019	5	SeqNo: 2	170265	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.020	0.5000	0	94.7	80	120			
Cadmium	0.49	0.0020	0.5000	0	97.6	80	120			
Chromium	0.48	0.0060	0.5000	0	96.4	80	120			
Lead	0.48	0.0050	0.5000	0	96.6	80	120			
Selenium	0.47	0.050	0.5000	0	93.4	80	120			
Silver	0.094	0.0050	0.1000	0	93.9	80	120			

Sample ID: MB-47925	Samp ⁻	Type: ME	BLK	Test	tCode: El	PA 6010B:	Total Recover	able Meta	als	
Client ID: PBW	Batc	h ID: 47 9	925	R	RunNo: 6	3599				
Prep Date: 10/3/2019	Analysis [Date: 10)/10/2019	S	SeqNo: 2	172999	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Selenium	ND	0.050								

Sample ID: LCS-47925	Samp	Type: LC	S	TestCode: EPA 6010B: Total Recoverable Metals							
Client ID: LCSW	Bato	h ID: 479	925	F	3599						
Prep Date: 10/3/2019	Analysis	Date: 10	/10/2019	S	SeqNo: 2	173001	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.45	0.020	0.5000	0	89.4	80	120				
Barium	0.45	0.020	0.5000	0	90.1	80	120				
Cadmium	0.44	0.0020	0.5000	0	88.6	80	120				
Chromium	0.44	0.0060	0.5000	0	88.1	80	120				

Qualifiers:

Silver

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

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

Page 16 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: LCS-47925 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals

Client ID: LCSW Batch ID: 47925 RunNo: 63599

Prep Date: 10/3/2019 Analysis Date: 10/10/2019 SeqNo: 2173001 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

0 92.1 Selenium 0.46 0.050 0.5000 80 120 Silver 0.088 0.0050 0.1000 0 88.1 80 120

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-R63747 SampType: MBLK TestCode: CYANIDE, Reactive

Client ID: PBW Batch ID: R63747 RunNo: 63747

Prep Date: Analysis Date: 10/15/2019 SeqNo: 2179127 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Cyanide, Reactive ND 0.00500

Sample ID: LCS-R63747 SampType: LCS TestCode: CYANIDE, Reactive

Client ID: LCSW Batch ID: R63747 RunNo: 63747

Prep Date: Analysis Date: 10/15/2019 SeqNo: 2179128 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Cyanide, Reactive 0.101 0.1000 0 101 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 18 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-R63747 SampType: MBLK TestCode: SULFIDE, Reactive

Client ID: PBW Batch ID: R63747 RunNo: 63747

Prep Date: Analysis Date: 10/7/2019 SeqNo: 2179130 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Reactive Sulfide ND 0.050

Sample ID: LCS-R63747 SampType: LCS TestCode: SULFIDE, Reactive

Client ID: LCSW Batch ID: R63747 RunNo: 63747

Prep Date: Analysis Date: 10/7/2019 SeqNo: 2179131 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Reactive Sulfide 0.47 0.5000 0 93.6 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 19 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: mb-1 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R63435 RunNo: 63435

Prep Date: Analysis Date: 10/3/2019 SeqNo: 2166170 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) ND 20.00

Sample ID: Ics-1 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R63435 RunNo: 63435

Prep Date: Analysis Date: 10/3/2019 SeqNo: 2166171 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) 79.64 20.00 80.00 0 99.6 90 110

Sample ID: mb-2 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R63435 RunNo: 63435

Prep Date: Analysis Date: 10/3/2019 SeqNo: 2166193 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) ND 20.00

Sample ID: Ics-2 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R63435 RunNo: 63435

Prep Date: Analysis Date: 10/3/2019 SeqNo: 2166194 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) 78.84 20.00 80.00 0 98.5 90 110

Qualifiers:

* Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 20 of 22

Hall Environmental Analysis Laboratory, Inc.

0.9995

WO#: **1910144**

0.0600

20

01-Nov-19

Client: Navajo Refining Company

Specific Gravity

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: 1910144-001CDUP SampType: DUP TestCode: Specific Gravity

0

Client ID: WDW-1,2,&3 Effluen Batch ID: R63579 RunNo: 63579

Prep Date: Analysis Date: 10/10/2019 SeqNo: 2172149 Units:

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

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 21 of 22

Hall Environmental Analysis Laboratory, Inc.

WO#: **1910144**

01-Nov-19

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-47951 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 47951 RunNo: 63462

Prep Date: 10/4/2019 Analysis Date: 10/7/2019 SeqNo: 2167775 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-47951 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 47951 RunNo: 63462

Prep Date: 10/4/2019 Analysis Date: 10/7/2019 SeqNo: 2167776 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids 1010 20.0 1000 0 101 80 120

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO** Work Order Number: 1910144 RcptNo: 1 Received By: 10/2/2019 9:30:00 AM Juan Rojas Lad Baca Completed By: Leah Baca 10/2/2019 1:17:37 PM Reviewed By: Chain of Custody Yes 🗸 No 🗌 Not Present 1. Is Chain of Custody complete? 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? Yes 🗸 No NA 🗌 4. Were all samples received at a temperature of >0° C to 6.0°C No NA 🗌 Yes 🗸 No 🗌 Yes 🗸 5. Sample(s) in proper container(s)? 6. Sufficient sample volume for indicated test(s)? Yes 🗸 No 🗌 Yes 🗸 No 🗌 7. Are samples (except VOA and ONG) properly preserved? No 🗸 NA 🗌 Yes 8. Was preservative added to bottles? 9. VOA vials have zero headspace? Yes 🗸 No 🗌 No VOA Vials Yes 🗌 No 🗸 10. Were any sample containers received broken? # of preserved bottles checked 11. Does paperwork match bottle labels? Yes 🗸 No 🗌 for pH: (2) or >(12) unless noted) (Note discrepancies on chain of custody) Adjusted? NO No 🗌 12. Are matrices correctly identified on Chain of Custody? Yes 🗸 Yes 🗸 No 🗌 13. Is it clear what analyses were requested? Checked by: DAD 10/3/19 No 🗌 14. Were all holding times able to be met? Yes 🗸 (If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes No 🗌 NA V Person Notified: Date By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks: 17. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 0.8 Good Yes

	TOPY																					s and Randy	
	ANAI YSTS I ABODATOD	a)	4901 Hawkins NE - Albuqueraue, NM 87109		4	(,s	260C28(3) (), (), (), (), (), (), (), (), (), ()	CE (13)	Br, I hod though thou (40) SVC	Me st 'Ye st 'Ye st 'Ye st 'Ye st 'S Mt 'S 'Ye st 'S 'Ye st 'S 'Ye st 'Y	846 946 946 946 946 946 946 946 946 946	Cation/anio VOCs/SW-8 (see attache SVOCs/SW (see attache R,C,I/40 CF Metals/SW- 7470 (see a TCLP Meta Ca, K, Mg, I TCLP Meta	×	×	×	×	×					Remarks: Send results to Scott Denton, Mike Holder, Robert Combs and Randy Dade.	
						CI ¹	,EO:	3, C	"pu	100	'Hd	HEAL No. Specific Grass SO4; TDS,	× 100									Time Remar	ש
ime:	□ Rush		N-1, 2, & 3 Inj Well	Project #: P.O. # 251841		ler:		Robert Combs / Scott Denton / Randy Dade	Sampler: Brady Historia	Yes 🗆 No	Sample Temperature: _ 6 - 2 = _	Preservative HE/	Neat/H2SO4	HNO3	HCL	Neat	Neat					Date	n n
Turn-Around Time:	X Standar	Project Name:	Quarterly WD	Project #: P.O		Project Manager:		Robert Combs	Sampler: Bra	On Ice:	Sample Temp	Container P Type and #	۳ «		Σ e	2	2 Ne					Received by:	on an
Chain-of-Custody Record			9 Artesia,					□ Level 4 (Full Validation)				Sample Request ID	WDW-1, 2, & 3 Effluent					Relinquished by: Bra. A. Hobard Grave Audille Relinquished by:					
-of-Cus	ning Co.		Mailing Address: P.O. Box 159 Artesia,		3311	-746-5451						Matrix	Liquid	Liquid	Liquid	Liquid	Liquid					Study to the second sec	
hain	vajo Refi		dress: P	-0159	575-748-	ax#: 575	;kage:	5		ype)		Time	16:05	16:05	16:05	16:05	16:05		50			7:me:	j
J	Client: Navajo Refining Co.		Mailing Ac	NM 88211-0159	Phone #: 575-748-3311	email or Fax#: 575-746-5451	QA/QC Package:	□ Standard	□ Other _	□ EDD (Type)		Date	9/30/19	9/30/19	9/30/19	9/30/19	9/30/19					Date: 10-1-19	j

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



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

January 23, 2020

Robert Combs Navajo Refining Company P.O. Box 159 Artesia, NM 88211-0159

TEL: (575) 748-3311

FAX

RE: Quarterly WDW-1, 2, & 3 Inj Well OrderNo.: 2001084

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/3/2020 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 #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109



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

WO#: **2001084**Date: **1/23/2020**

CLIENT: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Analytical Notes for EPA Method 8270:

The laboratory control spike (LCS) recovery for pentachlorophenol was slightly low.

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/23/2020

CLIENT:Navajo Refining CompanyClient Sample ID: WDW-1,2,&3 EffluentProject:Quarterly WDW-1, 2, & 3 Inj WellCollection Date: 12/30/2019 1:35:00 PMLab ID:2001084-001Matrix: AQUEOUSReceived Date: 1/3/2020 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8081: PESTICIDES TCLP						Analyst: JME
Chlordane	ND	0.030		mg/L	1	1/14/2020 12:21:38 PM
Surr: Decachlorobiphenyl	77.0	29.4-99.8		%Rec	1	1/14/2020 12:21:38 PM
Surr: Tetrachloro-m-xylene	70.3	20.7-100		%Rec	1	1/14/2020 12:21:38 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	10	0.50	*	mg/L	5	1/3/2020 6:22:56 PM
Chloride	620	25	*	mg/L	50	1/8/2020 6:53:02 PM
Bromide	0.88	0.50		mg/L	5	1/3/2020 6:22:56 PM
Phosphorus, Orthophosphate (As P)	ND	2.5	Н	mg/L	5	1/3/2020 6:22:56 PM
Sulfate	2200	25	*	mg/L	50	1/8/2020 6:53:02 PM
Nitrate+Nitrite as N	ND	1.0		mg/L	5	1/8/2020 7:05:55 PM
EPA METHOD 7470: MERCURY						Analyst: pmf
Mercury	ND	0.020		mg/L	1	1/7/2020 4:56:36 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: ELS
Calcium	420	5.0		mg/L	5	1/9/2020 11:44:43 AM
Magnesium	130	5.0		mg/L	5	1/9/2020 11:44:43 AM
Potassium	52	5.0		mg/L	5	1/9/2020 11:44:43 AM
Sodium	650	10		mg/L	10	1/13/2020 9:07:35 AM
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: ELS
Arsenic	ND	5.0		mg/L	1	1/9/2020 8:33:50 AM
Barium	ND	100		mg/L	1	1/9/2020 8:33:50 AM
Cadmium	ND	1.0		mg/L	1	1/9/2020 8:33:50 AM
Chromium	ND	5.0		mg/L	1	1/9/2020 8:33:50 AM
Lead	ND	5.0		mg/L	1	1/9/2020 8:33:50 AM
Selenium	ND	1.0		mg/L	1	1/9/2020 8:33:50 AM
Silver	ND	5.0		mg/L	1	1/9/2020 8:33:50 AM
EPA METHOD 8270C TCLP						Analyst: JDC
2-Methylphenol	ND	200		mg/L	1	1/7/2020 1:06:40 PM
3+4-Methylphenol	ND	200		mg/L	1	1/7/2020 1:06:40 PM
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/7/2020 1:06:40 PM
Hexachlorobenzene	ND	0.13		mg/L	1	1/7/2020 1:06:40 PM
Hexachlorobutadiene	ND	0.50		mg/L	1	1/7/2020 1:06:40 PM
Hexachloroethane	ND	3.0		mg/L	1	1/7/2020 1:06:40 PM
Nitrobenzene	ND	2.0		mg/L	1	1/7/2020 1:06:40 PM
Pentachlorophenol	ND	100		mg/L	1	1/7/2020 1:06:40 PM
Pyridine	ND	5.0		mg/L	1	1/7/2020 1:06:40 PM
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/7/2020 1:06:40 PM
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/7/2020 1:06:40 PM

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

Qualifiers:

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

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

Page 2 of 17

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/23/2020

CLIENT:Navajo Refining CompanyClient Sample ID: WDW-1,2,&3 EffluentProject:Quarterly WDW-1, 2, & 3 Inj WellCollection Date: 12/30/2019 1:35:00 PMLab ID:2001084-001Matrix: AQUEOUSReceived Date: 1/3/2020 9:00:00 AM

Analyses	Result	RL Q	Qual Units	DF	Date Analyzed
EPA METHOD 8270C TCLP					Analyst: JDC
Cresols, Total	ND	200	mg/L	1	1/7/2020 1:06:40 PM
Surr: 2-Fluorophenol	41.0	15-82.5	%Rec	1	1/7/2020 1:06:40 PM
Surr: Phenol-d5	38.0	15-74.2	%Rec	1	1/7/2020 1:06:40 PM
Surr: 2,4,6-Tribromophenol	58.6	18.6-118	%Rec	1	1/7/2020 1:06:40 PM
Surr: Nitrobenzene-d5	75.7	30.4-106	%Rec	1	1/7/2020 1:06:40 PM
Surr: 2-Fluorobiphenyl	61.1	15-104	%Rec	1	1/7/2020 1:06:40 PM
Surr: 4-Terphenyl-d14	54.8	15-133	%Rec	1	1/7/2020 1:06:40 PM
NOTES:					
* See the case narrative for notes.					
TCLP VOLATILES BY 8260B					Analyst: DJF
Benzene	ND	0.50	mg/L	1	1/6/2020 5:25:38 PM
1,2-Dichloroethane (EDC)	ND	0.50	mg/L	1	1/6/2020 5:25:38 PM
2-Butanone	ND	200	mg/L	1	1/6/2020 5:25:38 PM
Carbon Tetrachloride	ND	0.50	mg/L	1	1/6/2020 5:25:38 PM
Chloroform	ND	6.0	mg/L	1	1/6/2020 5:25:38 PM
1,4-Dichlorobenzene	ND	7.5	mg/L	1	1/6/2020 5:25:38 PM
1,1-Dichloroethene	ND	0.70	mg/L	1	1/6/2020 5:25:38 PM
Tetrachloroethene (PCE)	ND	0.70	mg/L	1	1/6/2020 5:25:38 PM
Trichloroethene (TCE)	ND	0.50	mg/L	1	1/6/2020 5:25:38 PM
Vinyl chloride	ND	0.20	mg/L	1	1/6/2020 5:25:38 PM
Chlorobenzene	ND	100	mg/L	1	1/6/2020 5:25:38 PM
Surr: 1,2-Dichloroethane-d4	91.5	70-130	%Rec	1	1/6/2020 5:25:38 PM
Surr: 4-Bromofluorobenzene	92.6	70-130	%Rec	1	1/6/2020 5:25:38 PM
Surr: Dibromofluoromethane	106	70-130	%Rec	1	1/6/2020 5:25:38 PM
Surr: Toluene-d8	96.9	70-130	%Rec	1	1/6/2020 5:25:38 PM
CORROSIVITY					Analyst: PAC
рН	7.39		su	1	1/13/2020
IGNITABILITY METHOD 1010					Analyst: PAC
Ignitability	>170		°F	1	1/10/2020
OXIDATION REDUCTION POTENTIAL					Analyst: PAC
Oxidation-Reduction Potential	80		mV	1	1/8/2020
CYANIDE, REACTIVE					Analyst: PAC
Cyanide, Reactive	0.00549	0.00500	mg/L	1	1/9/2020
SULFIDE, REACTIVE					Analyst: PAC
Reactive Sulfide	0.050	0.050	mg/L	1	1/8/2020
SM2510B: SPECIFIC CONDUCTANCE					Analyst: JRR

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

Qualifiers:

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

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

Page 3 of 17

Analytical Report

Lab Order 2001084

Date Reported: 1/23/2020

Hall Environmental Analysis Laboratory, Inc.

2001084-001

Lab ID:

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 12/30/2019 1:35:00 PM

Received Date: 1/3/2020 9:00:00 AM

Analyses	Result	RL Qu	al Units DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE				Analyst: JRR
Conductivity	6400	5.0	µmhos/c 1	1/7/2020 3:14:21 PM
SM2320B: ALKALINITY				Analyst: JRR
Bicarbonate (As CaCO3)	460.7	20.00	mg/L Ca 1	1/7/2020 3:14:21 PM
Carbonate (As CaCO3)	ND	2.000	mg/L Ca 1	1/7/2020 3:14:21 PM
Total Alkalinity (as CaCO3)	460.7	20.00	mg/L Ca 1	1/7/2020 3:14:21 PM
SPECIFIC GRAVITY				Analyst: JRR
Specific Gravity	1.010	0	1	1/16/2020 1:10:00 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS				Analyst: JMT
Total Dissolved Solids	4480	20.0	* mg/L 1	1/7/2020 1:59:00 PM

Matrix: AQUEOUS

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

Qualifiers:

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

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

Page 4 of 17

Analytical Report Lab Order 2001084

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/23/2020

CLIENT: Navajo Refining Company Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, & 3 Inj Well Collection Date:

Lab ID: 2001084-002 **Matrix:** TRIP BLANK **Received Date:** 1/3/2020 9:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
TCLP VOLATILES BY 8260B					Analyst: DJF
Benzene	ND	0.50	mg/L	1	1/6/2020 5:55:01 PM
1,2-Dichloroethane (EDC)	ND	0.50	mg/L	1	1/6/2020 5:55:01 PM
2-Butanone	ND	200	mg/L	1	1/6/2020 5:55:01 PM
Carbon Tetrachloride	ND	0.50	mg/L	1	1/6/2020 5:55:01 PM
Chloroform	ND	6.0	mg/L	1	1/6/2020 5:55:01 PM
1,4-Dichlorobenzene	ND	7.5	mg/L	1	1/6/2020 5:55:01 PM
1,1-Dichloroethene	ND	0.70	mg/L	1	1/6/2020 5:55:01 PM
Tetrachloroethene (PCE)	ND	0.70	mg/L	1	1/6/2020 5:55:01 PM
Trichloroethene (TCE)	ND	0.50	mg/L	1	1/6/2020 5:55:01 PM
Vinyl chloride	ND	0.20	mg/L	1	1/6/2020 5:55:01 PM
Chlorobenzene	ND	100	mg/L	1	1/6/2020 5:55:01 PM
Surr: 1,2-Dichloroethane-d4	101	70-130	%Rec	1	1/6/2020 5:55:01 PM
Surr: 4-Bromofluorobenzene	96.0	70-130	%Rec	1	1/6/2020 5:55:01 PM
Surr: Dibromofluoromethane	115	70-130	%Rec	1	1/6/2020 5:55:01 PM
Surr: Toluene-d8	97.8	70-130	%Rec	1	1/6/2020 5:55:01 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- $ND \qquad Not \ Detected \ at \ the \ Reporting \ Limit$
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

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

Hall Environmental Analysis Laboratory, Inc.

WO#: 2001084

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions

Batch ID: R65559 Client ID: PBW RunNo: 65559

Prep Date: Analysis Date: 1/3/2020 SeqNo: 2252044 Units: mg/L

PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Analyte Qual

Fluoride ND 0.10 Bromide ND 0.10 ND Phosphorus, Orthophosphate (As P 0.50

Sample ID: LCS TestCode: EPA Method 300.0: Anions SampType: Ics

Client ID: LCSW Batch ID: R65559 RunNo: 65559

Units: mg/L Prep Date: Analysis Date: 1/3/2020 SeqNo: 2252045

SPK value SPK Ref Val %REC Analyte PQL LowLimit HighLimit %RPD **RPDLimit** Qual 0.10 0 98.6 90 110 Fluoride 0.49 0.5000 Bromide 2.4 0.10 2.500 0 97.6 90 110 0 4.6 5.000 90 Phosphorus, Orthophosphate (As P 0.50 91.8 110

Sample ID: MB TestCode: EPA Method 300.0: Anions SampType: mblk

Client ID: PBW Batch ID: R65656 RunNo: 65656

Prep Date: Analysis Date: 1/8/2020 SeqNo: 2255102 Units: mg/L

SPK value SPK Ref Val %REC LowLimit **RPDLimit** Analyte Result PQL HighLimit %RPD Qual

Chloride ND 0.50 Sulfate ND 0.50 Nitrate+Nitrite as N ND 0.20

Sample ID: LCS SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R65656 RunNo: 65656

Prep Date: Analysis Date: 1/8/2020 SeqNo: 2255103 Units: mg/L

SPK value SPK Ref Val %REC %RPD **RPDLimit** Result PQL LowLimit HighLimit Qual Analyte 0.50 5.000 90 110 Chloride 4.7 0 94.9 Sulfate 9.6 0.50 10.00 0 95.5 90 110 Nitrate+Nitrite as N 3.4 0.20 3.500 0 97.0 90 110

Qualifiers:

Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Limit Page 6 of 17

Hall Environmental Analysis Laboratory, Inc.

SampType: LCS

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: RB	SampT	SampType: MBLK			tCode: TC	CLP Volatile	es by 8260B			
Client ID: PBW	Batch	n ID: T6	5591	R	RunNo: 65	5591				
Prep Date:	Analysis D	ate: 1/	6/2020	S	SeqNo: 22	252856	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
1,2-Dichloroethane (EDC)	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,1-Dichloroethene	ND	0.70								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Chlorobenzene	ND	100								
Surr: 1,2-Dichloroethane-d4	0.0092		0.01000		91.8	70	130			
Surr: 4-Bromofluorobenzene	0.010		0.01000		99.7	70	130			
Surr: Dibromofluoromethane	0.011		0.01000		105	70	130			
Surr: Toluene-d8	0.0096		0.01000		96.2	70	130			

Client ID: LCSW	Batch	n ID: T6	5591	F	RunNo: 6	5591				
Prep Date:	Analysis D	Date: 1/	6/2020	9	SeqNo: 2	252859	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50	0.02000	0	93.3	70	130			
1,1-Dichloroethene	ND	0.70	0.02000	0	94.9	70	130			
Trichloroethene (TCE)	ND	0.50	0.02000	0	89.2	70	130			
Chlorobenzene	ND	100	0.02000	0	88.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.0093		0.01000		92.5	70	130			
Surr: 4-Bromofluorobenzene	0.0096		0.01000		95.9	70	130			
Surr: Dibromofluoromethane	0.0096		0.01000		96.1	70	130			
Surr: Toluene-d8	0.0099		0.01000		99.3	70	130			

TestCode: TCLP Volatiles by 8260B

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

Sample ID: 100ng Ics

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 7 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: mb-49628	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8270C TCLP			
Client ID: PBW	Batch	n ID: 49 0	628	F	RunNo: 6	5621				
Prep Date: 1/6/2020	Analysis D)ate: 1/	7/2020	5	SeqNo: 2	254214	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.091		0.2000		45.4	15	82.5			
Surr: Phenol-d5	0.080		0.2000		40.2	15	74.2			
Surr: 2,4,6-Tribromophenol	0.14		0.2000		69.7	18.6	118			
Surr: Nitrobenzene-d5	0.078		0.1000		77.9	30.4	106			
Surr: 2-Fluorobiphenyl	0.076		0.1000		75.8	15	104			
Surr: 4-Terphenyl-d14	0.077		0.1000		77.2	15	133			

Sample ID: Ics-49628	Sampl	ype: LC	S	Tes	tCode: El	PA Method	8270C TCLP			
Client ID: LCSW	Batcl	n ID: 49 0	628	R	tunNo: 6	5621				
Prep Date: 1/6/2020	Analysis D	Date: 1/	7/2020	S	SeqNo: 2	254215	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.069	0.010	0.1000	0	69.0	33.8	121			
3+4-Methylphenol	0.13	0.010	0.2000	0	64.5	33.6	109			
2,4-Dinitrotoluene	0.064	0.010	0.1000	0	63.8	50.4	124			
Hexachlorobenzene	0.069	0.010	0.1000	0	69.5	50.1	120			
Hexachlorobutadiene	0.066	0.010	0.1000	0	66.2	16.1	103			
Hexachloroethane	0.056	0.010	0.1000	0	56.0	15	94.2			
Nitrobenzene	0.071	0.010	0.1000	0	70.8	32.4	125			
Pentachlorophenol	0.043	0.010	0.1000	0	43.2	44.6	114			S
Pyridine	0.067	0.010	0.1000	0	66.6	15	67			
2,4,5-Trichlorophenol	0.069	0.010	0.1000	0	68.8	49.4	118			
2,4,6-Trichlorophenol	0.061	0.010	0.1000	0	61.1	50.3	116			
Cresols, Total	0.20	0.010	0.3000	0	66.0	33.8	109			
Surr: 2-Fluorophenol	0.096		0.2000		48.2	15	82.5			
Surr: Phenol-d5	0.085		0.2000		42.3	15	74.2			
Surr: 2,4,6-Tribromophenol	0.12		0.2000		60.4	18.6	118			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 8 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: Ics-49628 SampType: LCS TestCode: EPA Method 8270C TCLP Client ID: LCSW Batch ID: 49628 RunNo: 65621 SeqNo: 2254215 Prep Date: 1/6/2020 Analysis Date: 1/7/2020 Units: mg/L Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 30.4 Surr: Nitrobenzene-d5 0.077 0.1000 77.2 106 Surr: 2-Fluorobiphenyl 0.071 0.1000 71.0 15 104 Surr: 4-Terphenyl-d14 0.073 0.1000 72.8 15 133

NOTES:

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 9 of 17

^{*} See the case narrative for analytical notes

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: Ics-1 99.9uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R65634 RunNo: 65634

Prep Date: Analysis Date: 1/7/2020 SeqNo: 2254575 Units: µmhos/cm

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Conductivity 100 5.0 99.90 0 100 85 115

Sample ID: Ics-2 99.9uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R65634 RunNo: 65634

Prep Date: Analysis Date: 1/7/2020 SeqNo: 2254601 Units: µmhos/cm

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Conductivity 100 5.0 99.90 0 101 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 10 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-49667 SampType: MBLK TestCode: EPA Method 7470: Mercury

Client ID: PBW Batch ID: 49667 RunNo: 65616

Prep Date: 1/7/2020 Analysis Date: 1/7/2020 SeqNo: 2253871 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury ND 0.00020

Sample ID: LCSLL-49667 SampType: LCSLL TestCode: EPA Method 7470: Mercury

Client ID: BatchQC Batch ID: 49667 RunNo: 65616

Prep Date: 1/7/2020 Analysis Date: 1/7/2020 SeqNo: 2253872 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury ND 0.00020 0.0001500 0 76.7 50 150

Sample ID: LCS-49667 SampType: LCS TestCode: EPA Method 7470: Mercury

Client ID: LCSW Batch ID: 49667 RunNo: 65616

Prep Date: 1/7/2020 Analysis Date: 1/7/2020 SeqNo: 2253873 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Mercury 0.0049 0.00020 0.005000 0 97.5 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

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 11 of 17

Hall Environmental Analysis Laboratory, Inc.

50

1.0

50.00

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB SampType: MBLK TestCode: EPA Method 6010B: Dissolved Metals Client ID: PBW Batch ID: A65667 RunNo: 65667 Prep Date: Analysis Date: 1/9/2020 SeqNo: 2255583 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Analyte Qual Calcium ND 1.0 Magnesium ND 1.0 ND 1.0 Potassium

Sample ID: LCS SampType: LCS TestCode: EPA Method 6010B: Dissolved Metals Client ID: LCSW Batch ID: A65667 RunNo: 65667 Prep Date: Analysis Date: 1/9/2020 SeqNo: 2255584 Units: mg/L SPK value SPK Ref Val %REC Analyte PQL LowLimit HighLimit %RPD **RPDLimit** Qual 51 0 80 120 Calcium 1.0 50.00 102 Magnesium 51 1.0 50.00 0 101 80 120

0

100

80

120

Sample ID: MB SampType: MBLK TestCode: EPA Method 6010B: Dissolved Metals Client ID: PBW Batch ID: A65725 RunNo: 65725 Prep Date: Analysis Date: 1/13/2020 SeqNo: 2257503 Units: mg/L Result SPK value SPK Ref Val %REC LowLimit **RPDLimit** Analyte PQL HighLimit %RPD Qual Sodium ND 1.0

Sample ID: LCS SampType: LCS TestCode: EPA Method 6010B: Dissolved Metals Batch ID: A65725 Client ID: LCSW RunNo: 65725 Prep Date: Analysis Date: 1/13/2020 SeqNo: 2257505 Units: mg/L SPK value SPK Ref Val %REC **RPDLimit** Result **PQL** LowLimit HighLimit %RPD Qual Analyte

Sodium 50 1.0 50.00 0 100 80 120

Qualifiers:

Potassium

Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

ND

0.0050

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-49636 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals Client ID: PBW Batch ID: 49636 RunNo: 65667 Prep Date: 1/6/2020 Analysis Date: 1/9/2020 SeqNo: 2255552 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Result Arsenic ND 0.020 Barium ND 0.020 ND Cadmium 0.0020 Chromium ND 0.0060 Lead ND 0.0050 Selenium ND 0.050

Sample ID: LCS-49636	Samp	Type: LC	S	Tes	TestCode: EPA 6010B: Total Recoverable Metals							
Client ID: LCSW	Bato	ch ID: 490	636	F	RunNo: 6	5667						
Prep Date: 1/6/2020	Analysis	Date: 1/	9/2020	9	SeqNo: 2	255556	Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic	0.46	0.020	0.5000	0	92.3	80	120					
Barium	0.47	0.020	0.5000	0	94.6	80	120					
Cadmium	0.47	0.0020	0.5000	0	94.2	80	120					
Chromium	0.46	0.0060	0.5000	0	92.8	80	120					
Lead	0.48	0.0050	0.5000	0	95.6	80	120					
Selenium	0.47	0.050	0.5000	0	94.4	80	120					
Silver	0.098	0.0050	0.1000	0	97.6	80	120					

Qualifiers:

Silver

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 13 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-R66014 SampType: MBLK TestCode: CYANIDE, Reactive

Client ID: PBW Batch ID: R66014 RunNo: 66014

Prep Date: Analysis Date: 1/9/2020 SeqNo: 2267180 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Cyanide, Reactive ND 0.00500

Sample ID: LCS-R66014 SampType: LCS TestCode: CYANIDE, Reactive

Client ID: LCSW Batch ID: R66014 RunNo: 66014

Prep Date: Analysis Date: 1/9/2020 SeqNo: 2267181 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Cyanide, Reactive 0.103 0.1000 0 103 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 14 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-R66014 SampType: MBLK TestCode: SULFIDE, Reactive

Client ID: PBW Batch ID: R66014 RunNo: 66014

Prep Date: Analysis Date: 1/8/2020 SeqNo: 2267183 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Reactive Sulfide ND 0.0050

Sample ID: LCS-R66014 SampType: LCS TestCode: SULFIDE, Reactive

Client ID: LCSW Batch ID: R66014 RunNo: 66014

Prep Date: Analysis Date: 1/8/2020 SeqNo: 2267184 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Reactive Sulfide 0.53 0.5000 0 106 85 115

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 15 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: mb-1 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R65634 RunNo: 65634

Prep Date: Analysis Date: 1/7/2020 SeqNo: 2254554 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) ND 20.00

Sample ID: Ics-1 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R65634 RunNo: 65634

Prep Date: Analysis Date: 1/7/2020 SeqNo: 2254555 Units: mg/L CaCO3

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Alkalinity (as CaCO3) 75.80 20.00 80.00 0 94.7 90 110

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 16 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001084**

23-Jan-20

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: MB-49644 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 49644 RunNo: 65609

Prep Date: 1/6/2020 Analysis Date: 1/7/2020 SeqNo: 2253491 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-49644 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 49644 RunNo: 65609

Prep Date: 1/6/2020 Analysis Date: 1/7/2020 SeqNo: 2253492 Units: mg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids 1010 20.0 1000 0 101 80 120

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 17 of 17



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

Sample Log-In Check List

NAVAJO REFINING CO Client Name: Work Order Number: 2001084 RcptNo: 1 Received By: Yazmine Garduno 1/3/2020 9:00:00 AM Completed By: Yazmine Garduno 1/3/2020 3:20:50 PM Reviewed By: 1/3/10 Chain of Custody 1. Is Chain of Custody sufficiently complete? Yes 🗹 No 🗌 Not Present 2. How was the sample delivered? FedEx Log In 3. Was an attempt made to cool the samples? Yes 🗸 No 🗌 NA 🗔 No 🔲 NA 🔲 4. Were all samples received at a temperature of >0° C to 6.0°C Yes 🔽 Sample(s) in proper container(s)? Yes 🔽 No 🗌 6. Sufficient sample volume for indicated test(s)? Yes 🗸 No 🗌 7. Are samples (except VOA and ONG) properly preserved? No 🗌 No 🗹 8. Was preservative added to bottles? Yes NA 🗌 NA 🗌 9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes 🗸 No 🗆 Yes \square No 🗹 10. Were any sample containers received broken? # of preserved bottles checked Yes 🗹 No 🔲 for pH: 11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) unless noted) 12. Are matrices correctly identified on Chain of Custody? Yes 🗸 No 🗌 13. Is it clear what analyses were requested? Yes 🗸 No 14. Were all holding times able to be met? No 🗌 Yes 🗹 (If no, notify customer for authorization.) Special Handling (if applicable) Yes 🗌 15. Was client notified of all discrepancies with this order? No 🗌 NA 🔽 Person Notified: Date By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks: 17. Cooler Information Cooler No Temp C Condition Seal Intact Seal No Seal Date 0.5 Good

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



April 02, 2019

ROBERT COMBS

HOLLYFRONTIER NAVAJO REFINING
501 EAST MAIN STREET

ARTESIA, NM 88210

RE: WW MONITORING

Enclosed are the results of analyses for samples received by the laboratory on 03/13/19 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Total Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keine

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210 Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
WW EFFLUENT TO WDW - 1	H900996-01	Wastewater	12-Mar-19 10:00	13-Mar-19 14:30	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS Fax To: NONE Reported: 02-Apr-19 15:17

WW EFFLUENT TO WDW - 1

H900996-01 (Wastewater)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										
Ammonia	52.2		1.25	mg/L	25	9031909	AC	19-Mar-19	350.1	
Biochemical Oxygen Demand	68.0			mg/L	1	9032907	CK	19-Mar-19	SM 5210B	SUB-A
Chloride*	790		4.00	mg/L	1	9031501	AC	18-Mar-19	4500-Cl-B	
General Heterotrophic Bacteria	< 3.00		3.00	MPN/mL	1	9012315	CK	01-Apr-19	GHB	SUB_L
Sulfate*	1770		250	mg/L	25	9031908	AC	19-Mar-19	375.4	
TDS*	3640		5.00	mg/L	1	9031208	AC	18-Mar-19	160.1	
Alkalinity, Total*	344		4.00	mg/L	1	9031804	AC	18-Mar-19	310.1	
TSS*	78.0		2.00	mg/L	1	9031502	AC	18-Mar-19	160.2	
Volatile Organic Compounds by	y EPA Method	8260B								
Benzene*	0.002	0.001	0.005	mg/L	10	9030810	ms	14-Mar-19	8260B	
Toluene*	0.002	0.001	0.005	mg/L	10	9030810	ms	14-Mar-19	8260B	
Ethylbenzene*	< 0.0007	0.0007	0.005	mg/L	10	9030810	ms	14-Mar-19	8260B	
Total Xylenes*	0.025	0.003	0.015	mg/L	10	9030810	ms	14-Mar-19	8260B	
Total BTEX	0.030	0.004	0.030	mg/L	10	9030810	ms	14-Mar-19	8260B	
Surrogate: Dibromofluoromethane			99.2 %	86.5-	122	9030810	ms	14-Mar-19	8260B	
Surrogate: Toluene-d8			101 %	85.7-	112	9030810	ms	14-Mar-19	8260B	
Surrogate: 4-Bromofluorobenzene			99.9 %	86.3-	117	9030810	ms	14-Mar-19	8260B	
			Green Anal	ytical Labo	oratories					
General Chemistry				-						
Cyanide, Total*	0.0127		0.0100	mg/L	1	B903139	LLG	15-Mar-19	EPA335.4	М
Fluoride*	9.70		0.500	mg/L	5	B903202	JDA	22-Mar-19	4500-F- C	
Nitrate/Nitrite as N*	0.537		0.200	mg/L	10	B903159	LLG	19-Mar-19	EPA353.2	
Total Kjeldahl Nitrogen*	59.7		0.500	mg/L	1	B903162	LLG	22-Mar-19	EPA351.2	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210 Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS Fax To: NONE Reported: 02-Apr-19 15:17

WW EFFLUENT TO WDW - 1

H900996-01 (Wastewater)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Green Anal	ytical Lab	oratories					
Total Recoverable Metals by ICP	(E200.7)									
Boron	< 0.300		0.300	mg/L	1	B903150	AES	19-Mar-19	EPA200.7	
Calcium*	538		0.500	mg/L	5	B903150	AES	19-Mar-19	EPA200.7	
Iron*	3.57		0.050	mg/L	1	B903150	AES	19-Mar-19	EPA200.7	
Magnesium*	164		0.500	mg/L	5	B903150	AES	19-Mar-19	EPA200.7	
Potassium*	44.2		1.00	mg/L	1	B903150	AES	19-Mar-19	EPA200.7	
Sodium*	548		5.00	mg/L	5	B903150	AES	19-Mar-19	EPA200.7	
Strontium*	6.92		0.100	mg/L	1	B903150	AES	19-Mar-19	EPA200.7	
Total Recoverable Metals by ICP	MS (E200.8)									
Barium*	0.0523		0.0005	mg/L	1	B903152	AES	22-Mar-19	EPA200.8	
Selenium*	0.0278		0.0010	mg/L	1	B903152	AES	22-Mar-19	EPA200.8	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

Inorganic Compounds - Quality Control

Cardinal Laboratories

Austra	Dl4	Reporting	TT!4.	Spike	Source	0/BEC	%REC	DDD	RPD	N-4
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9031208 - Filtration										
Blank (9031208-BLK1)				Prepared: 1	2-Mar-19 A	Analyzed:	14-Mar-19			
TDS	5.00	5.00	mg/L							
LCS (9031208-BS1)				Prepared: 1	2-Mar-19 A	Analyzed:	14-Mar-19			
TDS	514		mg/L	527		97.5	80-120			
Duplicate (9031208-DUP1)	Sou	rce: H900963-	-01	Prepared: 1	2-Mar-19 A	Analyzed:	14-Mar-19			
TDS	1130	5.00	mg/L		1160			2.27	20	
Batch 9031501 - General Prep - Wet Chem										
Blank (9031501-BLK1)				Prepared: 1	5-Mar-19 A	Analyzed:	18-Mar-19			
Chloride	ND	4.00	mg/L	Tropulou.						
LCS (9031501-BS1)				Prepared: 1	5-Mar-19 <i>A</i>	Analyzed:	18-Mar-19			
Chloride	100	4.00	mg/L	100		100	80-120			
LCS Dup (9031501-BSD1)				Prepared: 1	5-Mar-19 A	Analyzed:	18-Mar-19			
Chloride	100	4.00	mg/L	100		100	80-120	0.00	20	
Duplicate (9031501-DUP1)	Sou	rce: H900961-	-01	Prepared: 1	5-Mar-19 A	Analyzed:	18-Mar-19			
Chloride	160	4.00	mg/L	1	160		·	0.00	20	
Matrix Spike (9031501-MS1)	Sou	rce: H900961-	-01	Prepared: 1	5-Mar-19 A	Analyzed:	18-Mar-19			
Chloride	260	4.00	mg/L	100	160	100	80-120			
Batch 9031502 - Filtration										
Blank (9031502-BLK1)				Prenared: 1	5-Mar-19 A	Analyzed:	19-Mar-19			
TSS	ND	2.00	mg/L	Tropurou.	171	mary zeur	., .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS Fax To: NONE Reported: 02-Apr-19 15:17

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9031502 - Filtration										
Duplicate (9031502-DUP1)	Sou	rce: H900979-	01	Prepared: 1	5-Mar-19 A	Analyzed: 1	9-Mar-19			
TSS	115	2.00	mg/L		69.0			50.0	52.7	
Batch 9031804 - General Prep - Wet Chem										
Blank (9031804-BLK1)				Prepared &	: Analyzed:	18-Mar-19				
Alkalinity, Total	4.00	4.00	mg/L							
LCS (9031804-BS1)				Prepared &	Analyzed:	18-Mar-19				
Alkalinity, Total	260	10.0	mg/L	250		104	80-120			
LCS Dup (9031804-BSD1)				Prepared &	Analyzed:	18-Mar-19				
Alkalinity, Total	240	10.0	mg/L	250		96.0	80-120	8.00	20	
Duplicate (9031804-DUP1)	Sou	rce: H900983-	01	Prepared &	Analyzed:	18-Mar-19				
Alkalinity, Total	596	4.00	mg/L		600			0.669	20	
Matrix Spike (9031804-MS1)	Sou	rce: H900983-	01	Prepared &	Analyzed:	18-Mar-19				
Alkalinity, Total	820	10.0	mg/L	250	600	88.0	70-130			
Batch 9031908 - General Prep - Wet Chem										
Blank (9031908-BLK1)				Prepared &	Analyzed:	19-Mar-19				
Sulfate	ND	10.0	mg/L							
LCS (9031908-BS1)				Prepared &	Analyzed:	19-Mar-19				
Sulfate	22.7	10.0	mg/L	20.0		113	80-120			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

Inorganic Compounds - Quality Control

Cardinal Laboratories

	Reporting			Spike			%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9031908 - General Prep - Wet Chem										
LCS Dup (9031908-BSD1)				Prepared &	Analyzed:	19-Mar-19				
Sulfate	23.0	10.0	mg/L	20.0		115	80-120	1.31	20	
Duplicate (9031908-DUP1)	Sour	се: Н900994-	01	Prepared & Analyzed: 19-Mar-19						
Sulfate	514	10.0	mg/L		519			0.871	20	
Matrix Spike (9031908-MS1)	Sour	се: Н900994-	01	Prepared &	Analyzed:	19-Mar-19				
Sulfate	737	125	mg/L	250	519	87.3	70-130			
Batch 9031909 - General Prep - Wet Chem										
Blank (9031909-BLK1)				Prepared &	Analyzed:	19-Mar-19				
Ammonia	ND	0.0500	mg/L							
LCS (9031909-BS1)				Prepared &	Analyzed:	19-Mar-19				
Ammonia	1.71	0.0500	mg/L	2.00		85.5	80-120			
Duplicate (9031909-DUP1)	Sour	се: Н900996-	01	Prepared &	z Analyzed:	19-Mar-19				
Ammonia	54.5	0.0500	mg/L		52.2			4.22	20	
Matrix Spike (9031909-MS1)	Sour	се: Н900996-	01	Prepared &	Analyzed:	19-Mar-19				
Ammonia	198	4.17	mg/L	167	52.2	87.6	70-130			
Batch 9032907 - General Prep										
Blank (9032907-BLK1)				Prepared: 1	14-Mar-19 A	Analyzed: 1	9-Mar-19			
Biochemical Oxygen Demand	0.0400		mg/L							

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

%REC



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Spike

Source

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS Fax To: NONE Reported: 02-Apr-19 15:17

RPD

Inorganic Compounds - Quality Control

Cardinal Laboratories

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9032907 - General Prep										
LCS (9032907-BS1)				Prepared:	14-Mar-19 <i>A</i>	Analyzed: 1	9-Mar-19			
Biochemical Oxygen Demand	216		mg/L	198		109	85-115			
LCS Dup (9032907-BSD1)				Prepared: 1	14-Mar-19 <i>A</i>	Analyzed: 1	9-Mar-19			
Biochemical Oxygen Demand	208		mg/L	198		105	85-115	4.08	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

%REC



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210 Project: WW MONITORING

Spike

Source

Project Number: NONE GIVEN
Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

RPD

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Cardinal Laboratories

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9030810 - Volatiles										
Blank (9030810-BLK1)				Prepared: ()8-Mar-19 A	Analyzed: 1	3-Mar-19			
Benzene	ND	0.0005	mg/L							
Toluene	ND	0.0005	mg/L							
Ethylbenzene	ND	0.0005	mg/L							
Total Xylenes	ND	0.002	mg/L							
Total BTEX	ND	0.003	mg/L							
Surrogate: Dibromofluoromethane	0.0240		mg/L	0.0250		96.0	86.5-122			
Surrogate: Toluene-d8	0.0251		mg/L	0.0250		101	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0249		mg/L	0.0250		99.5	86.3-117			
LCS (9030810-BS1)				Prepared: ()8-Mar-19 <i>A</i>	Analyzed: 1	3-Mar-19			
Benzene	0.020	0.0005	mg/L	0.0200		102	84.9-121			
Toluene	0.021	0.0005	mg/L	0.0200		103	76.1-122			
Ethylbenzene	0.021	0.0005	mg/L	0.0200		103	78.5-126			
m+p - Xylene	0.041	0.001	mg/L	0.0400		103	81.1-129			
Total Xylenes	0.062	0.002	mg/L	0.0600		103	80.2-130			
o-Xylene	0.020	0.0005	mg/L	0.0200		102	77.5-134			
Surrogate: Dibromofluoromethane	0.0252		mg/L	0.0250		101	86.5-122			
Surrogate: Toluene-d8	0.0250		mg/L	0.0250		99.9	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.0250		98.6	86.3-117			
LCS Dup (9030810-BSD1)				Prepared: ()8-Mar-19 <i>F</i>	Analyzed: 1	3-Mar-19			
Benzene	0.021	0.0005	mg/L	0.0200		103	84.9-121	1.07	7.79	
Toluene	0.020	0.0005	mg/L	0.0200		102	76.1-122	0.293	9.78	
Ethylbenzene	0.020	0.0005	mg/L	0.0200		102	78.5-126	1.31	8.74	
m+p - Xylene	0.041	0.001	mg/L	0.0400		102	81.1-129	0.850	8.94	
Total Xylenes	0.061	0.002	mg/L	0.0600		102	80.2-130	0.961	9.04	
o-Xylene	0.020	0.0005	mg/L	0.0200		101	77.5-134	1.19	11.4	
Surrogate: Dibromofluoromethane	0.0251		mg/L	0.0250		100	86.5-122			
Surrogate: Toluene-d8	0.0248		mg/L	0.0250		99.1	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0250		mg/L	0.0250		99.9	86.3-117			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence are any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9030810 - Volatiles										

Matrix Spike (9030810-MS1)	Source	e: H900905-	-01	Prepared: (08-Mar-19 A	Analyzed:	14-Mar-19			
Benzene	0.845	0.025	mg/L	1.00	0.869	NR	47.6-148			QM-07
Toluene	1.61	0.025	mg/L	1.00	1.79	NR	41.4-144			QM-07
Ethylbenzene	0.416	0.025	mg/L	1.00	0.600	NR	40.6-151			QM-07
m+p - Xylene	0.694	0.050	mg/L	2.00	1.04	NR	42-155			QM-07
Total Xylenes	1.00	0.075	mg/L	3.00	1.48	NR	42.4-153			QM-07
o-Xylene	0.310	0.025	mg/L	1.00	0.440	NR	42.6-152			QM-07
Surrogate: Dibromofluoromethane	1.24		mg/L	1.25		99.0	86.5-122			
Surrogate: Toluene-d8	1.26		mg/L	1.25		101	85.7-112			
Surrogate: 4-Bromofluorobenzene	1.27		mg/L	1.25		101	86.3-117			
Matrix Spike Dup (9030810-MSD1)	Sourc	e: H900905-	-01	Prepared: (08-Mar-19 A	Analyzed:	14-Mar-19			
Benzene	0.850	0.025	mg/L	1.00	0.869	NR	47.6-148	0.561	12.5	QM-07
Toluene	1.59	0.025	mg/L	1.00	1.79	NR	41.4-144	1.33	11.5	QM-07
Ethylbenzene	0.424	0.025	mg/L	1.00	0.600	NR	40.6-151	1.97	17.6	QM-07
m+p - Xylene	0.700	0.050	mg/L	2.00	1.04	NR	42-155	0.842	18.6	QM-07
o-Xylene	0.307	0.025	mg/L	1.00	0.440	NR	42.6-152	0.971	18.1	QM-07
Total Xylenes	1.01	0.075	mg/L	3.00	1.48	NR	42.4-153	0.286	18.3	QM-07
Surrogate: Dibromofluoromethane	1.25		mg/L	1.25		99.7	86.5-122			
Surrogate: Toluene-d8	1.25		mg/L	1.25		99.9	85.7-112			
Surrogate: 4-Bromofluorobenzene	1.25		mg/L	1.25		100	86.3-117			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

General Chemistry - Quality Control

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B903139 - General Prep - Wet Chem										
Blank (B903139-BLK1)				Prepared: 1	14-Mar-19 <i>E</i>	Analyzed: 1	5-Mar-19			
Cyanide, Total	ND	0.0100	mg/L							
LCS (B903139-BS1)				Prepared: 1	14-Mar-19 A	Analyzed: 1	5-Mar-19			
Cyanide, Total	0.0958	0.0100	mg/L	0.100	·	95.8	90-110		·	
LCS Dup (B903139-BSD1)				Prepared:	14-Mar-19 <i>E</i>	Analyzed: 1	5-Mar-19			
Cyanide, Total	0.105	0.0100	mg/L	0.100		105	90-110	8.69	20	
Batch B903159 - General Prep - Wet Chem										
Blank (B903159-BLK1)				Prepared:	18-Mar-19 <i>A</i>	Analyzed: 1	9-Mar-19			
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B903159-BS1)				Prepared:	18-Mar-19 A	Analyzed: 1	9-Mar-19			
Nitrate/Nitrite as N	1.06	0.020	mg/L	1.00		106	90-110			
LCS Dup (B903159-BSD1)				Prepared:	18-Mar-19 A	Analyzed: 1	9-Mar-19			
Nitrate/Nitrite as N	1.04	0.020	mg/L	1.00		104	90-110	1.54	20	
Batch B903162 - General Prep - Wet Chem										
Blank (B903162-BLK1)				Prepared: 1	18-Mar-19 <i>A</i>	Analyzed: 2	2-Mar-19			
Total Kjeldahl Nitrogen	ND	0.500	mg/L							
LCS (B903162-BS1)				Prepared: 1	18-Mar-19 A	Analyzed: 2	2-Mar-19			
Total Kjeldahl Nitrogen	10.6	0.500	mg/L	10.0		106	90-110			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS Fax To: NONE Reported: 02-Apr-19 15:17

TUX TO: NONE

General Chemistry - Quality Control

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B903162 - General Prep - Wet Chem										
LCS Dup (B903162-BSD1)				Prepared: 1	18-Mar-19 A	Analyzed: 2	2-Mar-19			
Total Kjeldahl Nitrogen	9.87	0.500	mg/L	10.0		98.7	90-110	6.84	20	
Batch B903202 - General Prep - Wet Chem										
Blank (B903202-BLK1)				Prepared &	Analyzed:	22-Mar-19				
Fluoride	ND	0.100	mg/L							
LCS (B903202-BS1)				Prepared &	Analyzed:	22-Mar-19				
Fluoride	1.05	0.100	mg/L	1.00		105	85-115			
LCS Dup (B903202-BSD1)				Prepared &	z Analyzed:	22-Mar-19				

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch B903150 -	Total Rec. 200.7/200.8/200.2	

Blank (B903150-BLK1)				Prepared: 18-Ma	ır-19 Analyzed: 1	9-Mar-19			
Boron	ND	0.300	mg/L						
Iron	ND	0.050	mg/L						
Calcium	ND	0.100	mg/L						
Potassium	ND	1.00	mg/L						
Magnesium	ND	0.100	mg/L						
Sodium	ND	1.00	mg/L						
Strontium	ND	0.100	mg/L						
LCS (B903150-BS1)				Prepared: 18-Ma	ır-19 Analyzed: 1	9-Mar-19			
Potassium	8.14	1.00	mg/L	8.00	102	85-115			
Strontium	3.98	0.100	mg/L	4.00	99.6	85-115			
Magnesium	19.8	0.100	mg/L	20.0	98.8	85-115			
Sodium	3.18	1.00	mg/L	3.24	98.0	85-115			
Calcium	4.25	0.100	mg/L	4.00	106	85-115			
Iron	3.89	0.050	mg/L	4.00	97.3	85-115			
Boron	3.95	0.300	mg/L	4.00	98.8	85-115			
LCS Dup (B903150-BSD1)				Prepared: 18-Ma	r-19 Analyzed: 1	9-Mar-19			
Boron	3.93	0.300	mg/L	4.00	98.2	85-115	0.621	20	
Magnesium	19.6	0.100	mg/L	20.0	98.2	85-115	0.633	20	
Strontium	3.95	0.100	mg/L	4.00	98.8	85-115	0.758	20	
Sodium	3.12	1.00	mg/L	3.24	96.4	85-115	1.64	20	
Calcium	4.09	0.100	mg/L	4.00	102	85-115	3.80	20	
Potassium	8.07	1.00	mg/L	8.00	101	85-115	0.860	20	
Iron	3.88	0.050	mg/L	4.00	97.0	85-115	0.334	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

%REC



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210 Project: WW MONITORING

Spike

Source

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 02-Apr-19 15:17

RPD

Total Recoverable Metals by ICPMS (E200.8) - Quality Control

Green Analytical Laboratories

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B903152 - Total Rec. 200.7/20	00.8/200.2									
Blank (B903152-BLK1)				Prepared: 1	18-Mar-19 A	Analyzed: 2	2-Mar-19			
Barium	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
LCS (B903152-BS1)				Prepared:	18-Mar-19 A	Analyzed: 2	2-Mar-19			
Selenium	0.236	0.0010	mg/L	0.250		94.5	85-115			
Barium	0.0477	0.0005	mg/L	0.0500		95.5	85-115			
LCS Dup (B903152-BSD1)				Prepared:	18-Mar-19 A	Analyzed: 2	2-Mar-19			
Barium	0.0444	0.0005	mg/L	0.0500		88.8	85-115	7.27	20	
Selenium	0.231	0.0010	mg/L	0.250		92.5	85-115	2.10	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Notes and Definitions

SUB-AA Analysis subcontracted to Advanced Analysis, Inc.

SUB_LS Analysis subcontracted to Laboratory Services, Inc.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

recovery.

M5 Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference

in sample.

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Bacteria (GHB) Total Alkalinity (as HCO3-) REQUEST Cyanide Ø. Oil and Grease ANALYSIS BTEX NO3+NO2, Fluoride, TKN Total Metals 200.7/200.8 Ammonia BOD Chloride, Sulfate, TDS, TSS TIME 10:00 Zip: 88211-0159 SAMPLING Address: P.O. Box 159 Phone #: 575-748-3311 DATE 3/12/19 Attn: Susie Aguilar Company: HFNR 7718 P.O. #: 271426 OTHER: H2SO4 City: Artesia PRESERV. State: NM ICE / COOF Fax #: ACID/BASE: HNO3 OTHER: SCUDGE MATRIX OIL TIOS Zip: 88211-0159 **MASTEWATER ВЕТАМОИ ОРБЕ** # CONTAINERS Company Name: Hollyfrontier Navajo Refining LCC (HFNR) (G)RAB OR (C)OMP. O o) erete Project Owner: State: NM Project Manager: Robert Combs / Scott Denton Fax #: 5 Sample I.D. WW Effluent to WDW-1 Brade Husbard Project Location: Navajo Refinery Project Name: WW Monitoring Address: P.O. Box 159 Phone #: 575-748-3311 Sampler Name: 160081 FOR LAB USE ONLY Lab I.D. City: Artesia Project #:

analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim aising whether based in contract or tort, shall be limited to the amount paid by the client for the

and affiliates or successors arising out of or related to the performance of services hereunder by Cardial, regardless of whether such claim is based upon any of the above stated reasons or otherwise.	of services hereunder by Ca	rdinal, regardless of whether such claim	is based upon any of the above stated re	sasons or otherwise.			
Relinquished By: No. 17, 101, 0	Date:	Received By:	1110	Phone Result:	□ Yes □	oN [Add'I Phone #:
and the same	2-13-17		111111	Fax Result:	□ Yes □	% □	Add'I Fax #:
Sex 12	Time: 38	Jamora 4	March	REMARKS:	PO O+G	70.0	Containers
Relinquished By:	Date:	Received By:	>	8	N. A.		
2	Time:						
Delivered By: (Circle One)		Sample Condition	CH				
Sampler - UPS - Bus - Other:	3.00	490 Tres Tres	(mindis)				

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

FORM-006 Revision 1.0



May 14, 2019

ROBERT COMBS
HOLLYFRONTIER NAVAJO REFINING
501 EAST MAIN STREET
ARTESIA, NM 88210

RE: WW MONITORING

Enclosed are the results of analyses for samples received by the laboratory on 04/25/19 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Total Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)

Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keine

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Reported: 14-May-19 14:27

Fax To: NONE

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW FFFI UFNT TO WDW - 4	H901494-01	Wastewater	25-Apr-19 13:00	25-Apr-19 15:00

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS Fax To: NONE Reported: 14-May-19 14:27

WW EFFLUENT TO WDW - 4

H901494-01 (Wastewater)

								·		
			Cardin	al Laborat	ories					
Inorganic Compounds										
Ammonia	111		2.50	mg/L	50	9040507	AC	03-May-19	350.1	
Biochemical Oxygen Demand	168			mg/L	1	9050211	CK	01-May-19	SM 5210B	SUB-A
Chloride*	604		4.00	mg/L	1	9042507	AC	30-Apr-19	4500-Cl-B	
General Heterotrophic Bacteria	<3.00		3.00	MPN/mL	1	9012315	CK	09-May-19	GHB	SUB_LS
Sulfate*	2550		500	mg/L	50	9043009	AC	01-May-19	375.4	
TDS*	3790		5.00	mg/L	1	9042617	AC	01-May-19	160.1	
Alkalinity, Total*	630		4.00	mg/L	1	9042605	AC	26-Apr-19	310.1	
TSS*	300		2.00	mg/L	1	9042616	AC	30-Apr-19	160.2	
Volatile Organic Compounds by	EPA Method	8260B								
Benzene*	< 0.007	0.007	0.025	mg/L	50	9050120	ms	03-May-19	8260B	
Toluene*	< 0.006	0.006	0.025	mg/L	50	9050120	ms	03-May-19	8260B	
Ethylbenzene*	< 0.004	0.004	0.025	mg/L	50	9050120	ms	03-May-19	8260B	
Total Xylenes*	< 0.017	0.017	0.075	mg/L	50	9050120	ms	03-May-19	8260B	
Total BTEX	< 0.020	0.020	0.150	mg/L	50	9050120	ms	03-May-19	8260B	
Surrogate: Dibromofluoromethane			101 %	86.5-	122	9050120	ms	03-May-19	8260B	
Surrogate: Toluene-d8			100 %	85.7-	-112	9050120	ms	03-May-19	8260B	
Surrogate: 4-Bromofluorobenzene			107 %	86.3-	-117	9050120	ms	03-May-19	8260B	
			Green Anal	ytical Labo	oratories					
General Chemistry Cyanide, Total*	0.0189		0.0100	mg/L		B904258	LLG	30-Apr-19	EPA335.4	

General Chemistry									
Cyanide, Total*	0.0189	0.0100	mg/L	1	B904258	LLG	30-Apr-19	EPA335.4	
Fluoride*	11.5	2.00	mg/L	20	B905019	VJL	03-May-19	4500-F- C	
Nitrate/Nitrite as N*	0.719	0.020	mg/L	1	B905013	LLG	02-May-19	EPA353.2	
Total Kjeldahl Nitrogen*	122	6.00	mg/L	10	B904257	LLG	01-May-19	EPA351.2	
Oil & Grease (HEM)	93.7	5.00	mg/L	1	B904166	VJL	29-Apr-19	EPA1664 A	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence are any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210 Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

WW EFFLUENT TO WDW - 4

H901494-01 (Wastewater)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Green Analy	tical Lab	oratories					
Total Recoverable Metals by ICP	(E200.7)									
Boron	<1.50		1.50	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Calcium*	511		0.500	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Iron*	5.90		0.250	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Magnesium*	156		0.500	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Potassium*	67.1		5.00	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Sodium*	700		5.00	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Strontium*	7.48		0.500	mg/L	5	B904268	AES	03-May-19	EPA200.7	
Total Recoverable Metals by ICP	MS (E200.8)									
Barium*	0.0671		0.0005	mg/L	1	B904269	AES	01-May-19	EPA200.8	
Selenium*	0.0153		0.0010	mg/L	1	B904269	AES	01-May-19	EPA200.8	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

Inorganic Compounds - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9040507 - General Prep - Wet Chem										
Blank (9040507-BLK1)				Prepared &	Analyzed:	05-Apr-19				
Ammonia	ND	0.0500	mg/L							
LCS (9040507-BS1)				Prepared &	: Analyzed:	05-Apr-19				
Ammonia	1.72	0.0500	mg/L	2.00		86.0	80-120			
Duplicate (9040507-DUP1)	Sour	ce: H901229-	03	Prepared &	: Analyzed:	05-Apr-19				
Ammonia	218	0.0500	mg/L		211			2.92	20	
Matrix Spike (9040507-MS1)	Sour	ce: H901229-	-03	Prepared &	: Analyzed:	05-Apr-19				
Ammonia	1090	25.0	mg/L	1000	211	87.9	70-130			
Batch 9042507 - General Prep - Wet Chem										
Blank (9042507-BLK1)				Prepared &	Analyzed:	25-Apr-19				
Chloride	ND	4.00	mg/L							
LCS (9042507-BS1)				Prepared &	: Analyzed:	25-Apr-19				
Chloride	108	4.00	mg/L	100		108	80-120			
LCS Dup (9042507-BSD1)				Prepared &	Analyzed:	25-Apr-19				
Chloride	104	4.00	mg/L	100	·	104	80-120	3.77	20	
Duplicate (9042507-DUP1)	Soui	ce: H901458-	-01	Prepared &	: Analyzed:	25-Apr-19				
Chloride	1680	4.00	mg/L		1680			0.00	20	
35 . I G II (00 (00 T) 35 G)										
Matrix Spike (9042507-MS1)	Sour	ce: H901458-	01	Prepared &	: Analyzed:	25-Apr-19				

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

Inorganic Compounds - Quality Control

Cardinal Laboratories

	Reporting			Spike Source					RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9042605 - General Prep - Wet Chem										
Blank (9042605-BLK1)				Prepared &	k Analyzed:	26-Apr-19				
Alkalinity, Total	4.00	4.00	mg/L							
LCS (9042605-BS1)				Prepared &	દે Analyzed:	26-Apr-19				
Alkalinity, Total	270	10.0	mg/L	250		108	80-120			
LCS Dup (9042605-BSD1)				Prepared &	દે Analyzed:	26-Apr-19				
Alkalinity, Total	240	10.0	mg/L	250		96.0	80-120	11.8	20	
Duplicate (9042605-DUP1)	Sourc	е: Н901428-	-23	Prepared &	k Analyzed:	26-Apr-19				
Alkalinity, Total	124	4.00	mg/L		128			3.17	20	
Matrix Spike (9042605-MS1)	Source	е: Н901428-	-23	Prepared &	દે Analyzed:	26-Apr-19				
Alkalinity, Total	228	4.00	mg/L	100	128	100	70-130			
Batch 9042616 - Filtration										
Blank (9042616-BLK1)				Prepared: 2	29-Apr-19 A	Analyzed: 0	1-May-19			
TSS	2.00	2.00	mg/L							
Duplicate (9042616-DUP1)	Sourc	е: Н901466-	-01	Prepared: 2	29-Apr-19 A	Analyzed: 0	1-May-19			
TSS	72.0	2.00	mg/L	·	66.0		·	8.70	52.7	·
Batch 9042617 - Filtration										
Blank (9042617-BLK1)				Prepared: 2	29-Apr-19 A	Analyzed: 0	1-May-19			
TDS	ND	5.00	mg/L							

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN
Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9042617 - Filtration										
LCS (9042617-BS1)				Prepared: 2	29-Apr-19 A	Analyzed: 0	1-May-19			
TDS	554		mg/L	527		105	80-120			
Duplicate (9042617-DUP1)	Sour	ce: H901465-	01	Prepared: 2	29-Apr-19 A	Analyzed: 0	1-May-19			
TDS	870	5.00	mg/L		1130			26.0	20	QR-05
Batch 9043009 - General Prep - Wet Chem										
Blank (9043009-BLK1)				Prepared &	: Analyzed:	01-May-19)			
Sulfate	ND	10.0	mg/L							
LCS (9043009-BS1)				Prepared &	: Analyzed:	01-May-19)			
Sulfate	20.5	10.0	mg/L	20.0		103	80-120			
LCS Dup (9043009-BSD1)				Prepared: 3	30-Apr-19 A	Analyzed: 0	1-May-19			
Sulfate	23.3	10.0	mg/L	20.0		117	80-120	12.7	20	
Duplicate (9043009-DUP1)	Sour	ce: H901465-	-04	Prepared &	: Analyzed:	01-May-19)			
Sulfate	15000	10.0	mg/L		16100			6.97	20	
Matrix Spike (9043009-MS1)	Sour	се: Н901465-	04	Prepared &	: Analyzed:	01-May-19)			
Sulfate	26100	5000	mg/L	10000	16100	99.4	70-130			
Batch 9050211 - General Prep										
Blank (9050211-BLK1)				Prepared: 2	26-Apr-19 <i>A</i>	Analyzed: 0	1-May-19			
Biochemical Oxygen Demand	0.110		mg/L							

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

%REC

Limits

RPD



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Analyte

Project: WW MONITORING

Spike

Level

Source

Result

%REC

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

RPD

Limit

Notes

Inorganic Compounds - Quality Control

Cardinal Laboratories

Units

Reporting

Limit

Result

Batch 9050211 - General Prep								
LCS (9050211-BS1)			Prepared: 26-A	pr-19 Analyzed: 0	1-May-19			
Biochemical Oxygen Demand	224	mg/L	198	113	85-115			
LCS Dup (9050211-BSD1)			Prepared: 26-A	pr-19 Analyzed: 0	01-May-19			
Biochemical Oxygen Demand	218	mg/L	198	110	85-115	3.05	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

%REC



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210

Project: WW MONITORING

Spike

Source

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

RPD

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Cardinal Laboratories

Reporting

0.0255

		recporting		opine	Bourse		, or the		1112	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9050120 - Volatiles										
Blank (9050120-BLK1)				Prepared: ()1-May-19	Analyzed: (02-May-19			
Benzene	ND	0.0005	mg/L							
Toluene	ND	0.0005	mg/L							
Ethylbenzene	ND	0.0005	mg/L							
Total Xylenes	ND	0.002	mg/L							
Total BTEX	ND	0.003	mg/L							
Surrogate: Dibromofluoromethane	0.0243		mg/L	0.0250		97.4	86.5-122			
Surrogate: Toluene-d8	0.0248		mg/L	0.0250		99.2	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0252		mg/L	0.0250		101	86.3-117			
LCS (9050120-BS1)				Prepared: (01-May-19	Analyzed: (02-May-19			
Benzene	0.019	0.0005	mg/L	0.0200		93.6	84.9-121			
Toluene	0.019	0.0005	mg/L	0.0200		93.1	76.1-122			
Ethylbenzene	0.019	0.0005	mg/L	0.0200		93.3	78.5-126			
m+p - Xylene	0.038	0.001	mg/L	0.0400		95.9	81.1-129			
o-Xylene	0.019	0.0005	mg/L	0.0200		96.4	77.5-134			
Total Xylenes	0.058	0.002	mg/L	0.0600		96.1	80.2-130			
Surrogate: Dibromofluoromethane	0.0252		mg/L	0.0250		101	86.5-122			
Surrogate: Toluene-d8	0.0247		mg/L	0.0250		98.8	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0250		mg/L	0.0250		100	86.3-117			
LCS Dup (9050120-BSD1)				Prepared: (01-May-19	Analyzed: (02-May-19			
Benzene	0.019	0.0005	mg/L	0.0200		95.8	84.9-121	2.38	7.79	
Toluene	0.019	0.0005	mg/L	0.0200		94.3	76.1-122	1.33	9.78	
Ethylbenzene	0.019	0.0005	mg/L	0.0200		96.9	78.5-126	3.84	8.74	
m+p - Xylene	0.039	0.001	mg/L	0.0400		98.6	81.1-129	2.78	8.94	
o-Xylene	0.019	0.0005	mg/L	0.0200		97.4	77.5-134	0.981	11.4	
Total Xylenes	0.059	0.002	mg/L	0.0600		98.2	80.2-130	2.18	9.04	
Surrogate: Dibromofluoromethane	0.0257		mg/L	0.0250		103	86.5-122			
Surrogate: Toluene-d8	0.0248		mg/L	0.0250		99.2	85.7-112			

Cardinal Laboratories *=Accredited Analyte

mg/L

0.0250

102

86.3-117

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Surrogate: 4-Bromofluorobenzene



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210

Batch 9050120 - Volatiles

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Matrix Spike (9050120-MS1)	Sour	ce: H901444-	-01	Prepared: 0	1-May-19	Analyzed:	02-May-19			
Benzene	0.020	0.0005	mg/L	0.0200	ND	99.3	47.6-148			
Toluene	0.020	0.0005	mg/L	0.0200	ND	97.8	41.4-144			
Ethylbenzene	0.020	0.0005	mg/L	0.0200	ND	101	40.6-151			
m+p - Xylene	0.041	0.001	mg/L	0.0400	ND	102	42-155			
o-Xylene	0.020	0.0005	mg/L	0.0200	ND	101	42.6-152			
Total Xylenes	0.061	0.002	mg/L	0.0600	ND	102	42.4-153			
Surrogate: Dibromofluoromethane	0.0254		mg/L	0.0250		102	86.5-122			
Surrogate: Toluene-d8	0.0245		mg/L	0.0250		98.1	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0252		mg/L	0.0250		101	86.3-117			
Matrix Spike Dup (9050120-MSD1)	Sour	се: Н901444-	-01	Prepared: 0	1-May-19	Analyzed:	02-May-19			
Benzene	0.021	0.0005	mg/L	0.0200	ND	103	47.6-148	3.90	12.5	
Toluene	0.021	0.0005	mg/L	0.0200	ND	104	41.4-144	5.85	11.5	

Matrix Spike Dup (9050120-MSD1)	Sour	ce: H901444-	-01	Prepared: 0	1-May-19	Anaiyzea:	02-May-19			
Benzene	0.021	0.0005	mg/L	0.0200	ND	103	47.6-148	3.90	12.5	
Toluene	0.021	0.0005	mg/L	0.0200	ND	104	41.4-144	5.85	11.5	
Ethylbenzene	0.021	0.0005	mg/L	0.0200	ND	106	40.6-151	4.74	17.6	
m+p - Xylene	0.044	0.001	mg/L	0.0400	ND	109	42-155	6.61	18.6	
o-Xylene	0.021	0.0005	mg/L	0.0200	ND	106	42.6-152	5.60	18.1	
Total Xylenes	0.065	0.002	mg/L	0.0600	ND	108	42.4-153	6.28	18.3	
Surrogate: Dibromofluoromethane	0.0254		mg/L	0.0250		102	86.5-122			
Surrogate: Toluene-d8	0.0250		mg/L	0.0250		99.8	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0254		mg/L	0.0250		102	86.3-117			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

General Chemistry - Quality Control

Green Analytical Laboratories

	D. I	Reporting	TT	Spike	Source	0/DEC	%REC	DDD	RPD	NI.
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B904166 - General Prep - Wet Chem										
Blank (B904166-BLK1)				Prepared: 1	7-Apr-19 A	analyzed: 2	2-Apr-19			
Oil & Grease (HEM)	ND	5.00	mg/L							
LCS (B904166-BS1)				Prepared: 1	7-Apr-19 A	analyzed: 2	2-Apr-19			
Oil & Grease (HEM)	34.6	5.00	mg/L	40.0		86.5	85-115			
LCS Dup (B904166-BSD1)				Prepared: 1	7-Apr-19 A	analyzed: 2	3-Apr-19			
Oil & Grease (HEM)	35.8	5.00	mg/L	40.0		89.5	85-115	3.41	20	
Batch B904257 - General Prep - Wet Chem										
Blank (B904257-BLK1)				Prepared: 3	0-Apr-19 A	nalyzed: 0	1-May-19			
Total Kjeldahl Nitrogen	ND	0.500	mg/L							
LCS (B904257-BS1)				Prepared: 3	0-Apr-19 A	nalyzed: 0	1-May-19			
Total Kjeldahl Nitrogen	10.1	0.500	mg/L	10.0		101	90-110			
LCS Dup (B904257-BSD1)				Prepared: 3	0-Apr-19 A	nalyzed: 0	1-May-19			
Total Kjeldahl Nitrogen	9.90	0.500	mg/L	10.0		99.0	90-110	2.45	20	
Batch B904258 - General Prep - Wet Chem										
Blank (B904258-BLK1)				Prepared &	Analyzed:	30-Apr-19				
Cyanide, Total	ND	0.0100	mg/L		-					
LCS (B904258-BS1)				Prepared &	: Analyzed:	30-Apr-19				
Cyanide, Total	0.0977	0.0100	mg/L	0.100		97.7	90-110			

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

General Chemistry - Quality Control

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B904258 - General Prep - Wet Chem										
LCS Dup (B904258-BSD1)				Prepared &	Analyzed:	30-Apr-19				
Cyanide, Total	0.101	0.0100	mg/L	0.100		101	90-110	3.32	20	
Batch B905013 - General Prep - Wet Chem										
Blank (B905013-BLK1)				Prepared: ()1-May-19	Analyzed: ()2-May-19			
Nitrate/Nitrite as N	ND	0.020	mg/L							
LCS (B905013-BS1)				Prepared: ()1-May-19	Analyzed: ()2-May-19			
Nitrate/Nitrite as N	1.05	0.020	mg/L	1.00		105	90-110			
LCS Dup (B905013-BSD1)				Prepared: ()1-May-19	Analyzed: ()2-May-19			
Nitrate/Nitrite as N	1.05	0.020	mg/L	1.00		105	90-110	0.218	20	
Batch B905019 - General Prep - Wet Chem										
Blank (B905019-BLK1)				Prepared: ()2-May-19	Analyzed: ()3-May-19			
Fluoride	ND	0.100	mg/L							
LCS (B905019-BS1)				Prepared: 0)2-May-19	Analyzed: ()3-May-19			
Fluoride	1.13	0.100	mg/L	1.00		113	85-115			
LCS Dup (B905019-BSD1)				Prepared: ()2-May-19	Analyzed: ()3-May-19			
Fluoride	1.14	0.100	mg/L	1.00		114	85-115	1.50	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



HOLLYFRONTIER NAVAJO REFINING

501 EAST MAIN STREET ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Project Manager: ROBERT COMBS

Fax To: NONE

Reported: 14-May-19 14:27

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch B904268 -	Total Rec. 200.7/200.8/200.2	

Blank (B904268-BLK1)				Prepared: 30-Ap	r-19 Analyzed: 0	2-May-19			
Calcium	ND	0.100	mg/L	riepared. 50 rip.	1 197 maryzea. 0.	2 iviay 17			
Iron	ND	0.050	mg/L						
Potassium	ND	1.00	mg/L						
Strontium	ND	0.100	mg/L						
Sodium	ND	1.00	mg/L						
Magnesium	ND	0.100	mg/L						
Boron	ND	0.300	mg/L						
LCS (B904268-BS1)				Prepared: 30-Ap	r-19 Analyzed: 0	2-May-19			
Strontium	4.09	0.100	mg/L	4.00	102	85-115			
Sodium	3.21	1.00	mg/L	3.24	99.0	85-115			
Potassium	7.93	1.00	mg/L	8.00	99.2	85-115			
Magnesium	20.5	0.100	mg/L	20.0	103	85-115			
Boron	4.07	0.300	mg/L	4.00	102	85-115			
Calcium	4.08	0.100	mg/L	4.00	102	85-115			
Iron	4.06	0.050	mg/L	4.00	101	85-115			
LCS Dup (B904268-BSD1)				Prepared: 30-Ap	r-19 Analyzed: 0	2-May-19			
Strontium	4.03	0.100	mg/L	4.00	101	85-115	1.32	20	
Boron	4.07	0.300	mg/L	4.00	102	85-115	0.0563	20	
Magnesium	20.1	0.100	mg/L	20.0	100	85-115	2.20	20	
Calcium	4.02	0.100	mg/L	4.00	100	85-115	1.64	20	
Sodium	3.17	1.00	mg/L	3.24	97.8	85-115	1.28	20	
Potassium	7.94	1.00	mg/L	8.00	99.2	85-115	0.0393	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

%REC



Analytical Results For:

HOLLYFRONTIER NAVAJO REFINING 501 EAST MAIN STREET

ARTESIA NM, 88210

Project: WW MONITORING

Project Number: NONE GIVEN

Spike

Source

14-May-19 14:27

Reported:

RPD

Project Manager: ROBERT COMBS

Fax To: NONE

Total Recoverable Metals by ICPMS (E200.8) - Quality Control

Green Analytical Laboratories

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B904269 - Total Rec. 200.7/20	0.8/200.2									
Blank (B904269-BLK1)				Prepared: 3	30-Apr-19 A	analyzed: 0	1-May-19			
Barium	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
LCS (B904269-BS1)				Prepared: 3	30-Apr-19 A	analyzed: 0	1-May-19			
Selenium	0.254	0.0010	mg/L	0.250		101	85-115			
Barium	0.0490	0.0005	mg/L	0.0500		98.0	85-115			
LCS Dup (B904269-BSD1)				Prepared: 3	30-Apr-19 A	analyzed: 0	1-May-19			
Barium	0.0484	0.0005	mg/L	0.0500		96.8	85-115	1.26	20	
Selenium	0.250	0.0010	mg/L	0.250		100	85-115	1.32	20	

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Notes and Definitions

SUB-AA Analysis subcontracted to Advanced Analysis, Inc.

SUB_LS Analysis subcontracted to Laboratory Services, Inc.

QR-05 The RPD exceeded historical limits.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence aring any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Bacteria (GHB) Total Alkalinity (as HCO3-) REQUEST Cyanide Oil and Grease ANALYSIS **X**3T8 NO3+NO2, Fluoride, TKN 7otal Metals 200.7/200.8 Ammonia BOD Chloride, Sulfate, TDS, TSS Company: Navajo Refinery LLC Zip: 88211-0159 SAMPLING Address: P.O. Box 159 Phone #: 575-748-3311 BILL TO Attn: Susie Aguilar P.O. #: 122783 OTHER: H2SO4 City: Artesia PRESERV. State: NM CE / COOF Fax #: ACID/BASE: HNO3 : A3HTO SCUDGE MATRIX TIOS Zip: 88211-0159 **MASTEWATER ВЕТАМОИ ОРВЕЕ** # CONTAINERS Company Name: Holly Frontier Navajo Refining, LLC (HFNR) (G)RAB OR (C)OMP. Project Owner: State: NM Project Manager: Robert Combs / Scott Denton Fax #: Sample I.D. Brady Hubbard Project Location: Navajo Refinery Project Name: WW Monitoring Address: P.O. Box 159 Phone #: 575-748-3311 Sampler Name: FOR LAB USE ONLY Hondy Lab I.D. City: Artesia Project #:

TIME

DATE 4/25/19

OIL

WWW Effluent to WDW-4

8

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries

☐ No Add'l Phone #:
☐ No Add'l Fax #:

□ Yes

Phone Result: Fax Result: REMARKS:

eceived By:

Relinquished By:

Relinquished By

Received By.

Time:

Time:

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476 Sample Condition
Cool Intact
Tes Pres 000 7

> Revision 1.0 FORM-006

Sampler - UPS - Bus - Other:

Delivered By: (Circle One)