HollyFrontier Navajo Refining LLC
501 East Main, Artesia, New Mexico 88210
Tel: 575-748-3311
hollyfrontier.com

HOLLYFRONTIER.

October 8, 2021

Mr. Carl Chavez, CHMM
New Mexico oil Conservation Division (Albuquerque Office)
NM Energy, Minerals & Natural Resources Department
5200 Oakland Avenue, NE
Albuquerque, NM 87113

RE: 2021 4th Quarter (Apr – Jun) Injection Report for Wells WDW-1, WDW-2, WDW-3, WDW-4
HollyFrontier Navajo Refining LLC

Dear Mr. Chavez,

Enclosed, please find the fourth quarter 2021 sampling results for fluids injected into WDW-1, WDW-2, WDW-3 and WDW-4 and a table showing the various volumes and pressures as required under Permit Condition 2.2.1, Quarterly Reports.

Over the fourth quarter, covering April to June 2021, the average injection pressure for each well was 974 psig for WDW-1, 1,043 psig for WDW-2, 936 psig for WDW-3 and 154 psig for WDW-4. The average flows for each well is 285 gpm for WDW-1, 92 gpm for WDW-2, 129 gpm for WDW-3 and 204 gpm for WDW-4. There were no losses from the glycol expansion tanks Well Annulus Monitoring System (WAMS). The quarterly effluent analyses indicate parameters are within permit limits.

This report covers the period from April 1, 2021 to June 30, 2021. HollyFrontier Navajo Refining LLC has disposed of 2,205,426 barrels of fluid into the four wells during the time period April to June 2021. The volume per well is:

- 888,822 barrels into WDW-1: 30-015-27592
- 285,908 barrels into WDW-2: 30-015-20894
- 393,222 barrels into WDW-3: 30-015-26575
- 637,474 barrels intoWDW-4: 30-015-44677

This report is signed and certified in accordance with WQCC section 5101.G. If there are any questions, please contact Randy Dade at 575-746-5281.

Respectfully

Kawika Tupou
Environmental Manager
HollyFrontier Navajo Refining LLC,

2021 FOURTH QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maximum Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure Av (psig)	Maximum Annular Pressure Mx (psig)	Minimum Annular Pressure Mn (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	TOTAL CUMULATIVE Volume (barrels)
30-015-27592 WDW-1														47,626,294
Apr-21	936	1,033	792	266	331	186	46	85	25	9,120	11,349	6,377	**273,600**	47,899,894
May-21	956	1,178	847	304	378	262	86	263	35	10,423	12,960	1,200	**323,108**	48,223,002
Jun-21	1,031	1,309	834	284	334	214	153	378	46	9,737	11,451	7,337	**292,114**	48,515,116
Monthly Avg	974			285								**TOTAL**	888,822	
30-015-20894 WDW-2														29,429,340
Apr-21	1,077	1,249	908	96	114	75	92	202	81	3,291	3,909	2,571	**98,743**	29,528,083
May-21	1,017	1,159	942	89	108	80	737	963	557	3,051	3,703	2,743	**94,594**	29,622,677
Jun-21	1,034	1,187	891	90	107	73	826	958	367	3,086	3,669	2,503	**92,571**	29,715,248
Monthly Avg	1,043			92								**TOTAL**	285,908	
30-015-26575 WDW-3														21,281,293
Apr-21	920	1,042	865	126	148	100	300	426	256	4,046	5,074	3,429	**121,371**	21,402,664
May-21	954	1,051	898	129	154	115	420	522	314	4,423	5,280	3,943	**137,109**	21,539,773
Jun-21	924	1,066	818	131	163	97	482	578	271	4,491	5,586	3,326	**134,742**	21,674,515
Monthly Avg	936			129								**TOTAL**	393,222	
30-015-44677 WDW-4														6,263,350
Apr-21	135	151	116	207	245	166	173	225	152	7,097	8,400	5,691	**212,914**	6,476,264
May-21	143	165	129	203	238	180	226	265	175	6,960	8,160	6,171	**215,760**	6,692,024
Jun-21	185	668	135	203	256	63	197	262	85	6,960	8,777	2,160	**208,800**	6,900,824
Monthly Avg	154			204								**TOTAL**	637,474	

	Total BBLS	Beginning Volume	Ending Volume
WDW1	888,822	47,626,294	48,515,116
WDW2	285,908	29,429,340	29,715,248
WDW3	393,222	21,281,293	21,674,515
WDW4	637,474	6,263,350	6,900,824

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 17, 2021

Randy Dade

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

RE: Quarterly WDW-1, 2, 3, & 4 Inj Well OrderNo.: 2105A94

Dear Randy Dade:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/26/2021 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
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2105A94**
Date Reported **6/17/2021**

CLIENT: Navajo Refining Company
Client Sample ID: WDW-1,2,3 & 4 Effluent
Project: Quarterly WDW-1, 2, 3, & 4 Inj Well
Collection Date: 5/24/2021 1:30:00 PM
Lab ID: 2105A94-001 **Matrix:** AQUEOUS **Received Date:** 5/26/2021 7:30:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES TCLP							Analyst: **LSB**	
Chlordane	ND	0.00050	0.030		mg/L	1	5/27/2021 3:59:33 PM	60261
Surr: Decachlorobiphenyl	115	0	41.7-129		%Rec	1	5/27/2021 3:59:33 PM	60261
Surr: Tetrachloro-m-xylene	95.0	0	31.8-88.5	S	%Rec	1	5/27/2021 3:59:33 PM	60261
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	22	1.1	2.0	*	mg/L	20	5/26/2021 5:22:29 PM	R77690
Chloride	390	5.0	10	*	mg/L	20	5/26/2021 5:22:29 PM	R77690
Bromide	0.59	0.25	0.50		mg/L	5	5/26/2021 5:10:08 PM	R77690
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5	H	mg/L	5	5/26/2021 5:10:08 PM	R77690
Sulfate	2300	25	50	*	mg/L	100	6/10/2021 12:18:29 PM	R79018
Nitrate+Nitrite as N	0.31	0.11	1.0	J	mg/L	5	6/14/2021 8:32:58 PM	R79060
EPA METHOD 7470: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.020		mg/L	1	5/27/2021 5:11:18 PM	60292
EPA METHOD 6010B: DISSOLVED METALS							Analyst: **ags**	
Calcium	380	0.23	5.0		mg/L	5	6/1/2021 11:53:59 AM	A78776
Magnesium	120	0.097	5.0		mg/L	5	6/1/2021 11:53:59 AM	A78776
Potassium	110	1.0	5.0		mg/L	5	6/1/2021 11:53:59 AM	A78776
Sodium	800	2.6	10		mg/L	10	6/1/2021 12:04:53 PM	A78776
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: **ags**	
Arsenic	ND	0.11	0.15		mg/L	5	6/1/2021 11:58:00 AM	60290
Barium	0.043	0.0053	0.010		mg/L	5	6/1/2021 11:58:00 AM	60290
Cadmium	ND	0.0045	0.010		mg/L	5	6/1/2021 11:58:00 AM	60290
Chromium	ND	0.0070	0.030		mg/L	5	6/1/2021 11:58:00 AM	60290
Lead	ND	0.064	0.10		mg/L	5	6/1/2021 11:58:00 AM	60290
Selenium	ND	0.11	0.25		mg/L	5	6/1/2021 11:58:00 AM	60290
Silver	0.0067	0.0063	0.025	J	mg/L	5	6/1/2021 11:58:00 AM	60290
EPA METHOD 8270C TCLP							Analyst: **DAM**	
2-Methylphenol	ND	0.00051	200		mg/L	1	6/7/2021 2:00:51 AM	60263
3+4-Methylphenol	ND	0.00045	200		mg/L	1	6/7/2021 2:00:51 AM	60263
2,4-Dinitrotoluene	ND	0.00062	0.13		mg/L	1	6/7/2021 2:00:51 AM	60263
Hexachlorobenzene	ND	0.00066	0.13		mg/L	1	6/7/2021 2:00:51 AM	60263
Hexachlorobutadiene	ND	0.00082	0.50		mg/L	1	6/7/2021 2:00:51 AM	60263
Hexachloroethane	ND	0.00045	3.0		mg/L	1	6/7/2021 2:00:51 AM	60263
Nitrobenzene	ND	0.00051	2.0		mg/L	1	6/7/2021 2:00:51 AM	60263
Pentachlorophenol	ND	0.00059	100		mg/L	1	6/7/2021 2:00:51 AM	60263
Pyridine	ND	0.00093	5.0		mg/L	1	6/7/2021 2:00:51 AM	60263
2,4,5-Trichlorophenol	ND	0.00062	400		mg/L	1	6/7/2021 2:00:51 AM	60263
2,4,6-Trichlorophenol	ND	0.00043	2.0		mg/L	1	6/7/2021 2:00:51 AM	60263

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

Qualifiers:

*	Value exceeds 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.

Analytical Report
Lab Order **2105A94**
Date Reported: **6/17/2021**

CLIENT: Navajo Refining Company
Client Sample ID: WDW-1,2,3 & 4 Effluent
Project: Quarterly WDW-1, 2, 3, & 4 Inj Well
Collection Date: 5/24/2021 1:30:00 PM
Lab ID: 2105A94-001
Matrix: AQUEOUS
Received Date: 5/26/2021 7:30:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C TCLP							Analyst: **DAM**	
Cresols, Total	ND	0.00051	200		mg/L	1	6/7/2021 2:00:51 AM	60263
Surr: 2-Fluorophenol	5.18	0	15-91.8	S	%Rec	1	6/7/2021 2:00:51 AM	60263
Surr: Phenol-d5	22.2	0	15-69.6		%Rec	1	6/7/2021 2:00:51 AM	60263
Surr: 2,4,6-Tribromophenol	5.62	0	15-115	S	%Rec	1	6/7/2021 2:00:51 AM	60263
Surr: Nitrobenzene-d5	71.2	0	15-109		%Rec	1	6/7/2021 2:00:51 AM	60263
Surr: 2-Fluorobiphenyl	72.1	0	15-96		%Rec	1	6/7/2021 2:00:51 AM	60263
Surr: 4-Terphenyl-d14	71.9	0	15-133		%Rec	1	6/7/2021 2:00:51 AM	60263
TCLP VOLATILES BY 8260B							Analyst: **BRM**	
Benzene	ND	0.00023	0.00023		mg/L	200	6/1/2021 2:51:36 PM	B78786
1,2-Dichloroethane (EDC)	ND	0.00022	0.00022		mg/L	200	6/1/2021 2:51:36 PM	B78786
2-Butanone	ND	0.0011	0.0011		mg/L	200	6/1/2021 2:51:36 PM	B78786
Carbon Tetrachloride	ND	0.00018	0.00018		mg/L	200	6/1/2021 2:51:36 PM	B78786
Chloroform	ND	0.00013	0.00013		mg/L	200	6/1/2021 2:51:36 PM	B78786
1,4-Dichlorobenzene	ND	0.00021	0.00021		mg/L	200	6/1/2021 2:51:36 PM	B78786
1,1-Dichloroethene	ND	0.00013	0.00013		mg/L	200	6/1/2021 2:51:36 PM	B78786
Tetrachloroethene (PCE)	ND	0.00036	0.00036		mg/L	200	6/1/2021 2:51:36 PM	B78786
Trichloroethene (TCE)	ND	0.00020	0.00020		mg/L	200	6/1/2021 2:51:36 PM	B78786
Vinyl chloride	ND	0.00020	0.00020		mg/L	200	6/1/2021 2:51:36 PM	B78786
Chlorobenzene	ND	0.00014	0.00014		mg/L	200	6/1/2021 2:51:36 PM	B78786
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	200	6/1/2021 2:51:36 PM	B78786
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	200	6/1/2021 2:51:36 PM	B78786
Surr: Dibromofluoromethane	102	0	70-130		%Rec	200	6/1/2021 2:51:36 PM	B78786
Surr: Toluene-d8	99.0	0	70-130		%Rec	200	6/1/2021 2:51:36 PM	B78786
SM2510B: SPECIFIC CONDUCTANCE							Analyst: **CAS**	
Conductivity	5700	10	10		µmhos/c	1	5/28/2021 4:41:04 PM	R78766
SM2320B: ALKALINITY							Analyst: **CAS**	
Bicarbonate (As CaCO3)	498.3	20.00	20.00		mg/L Ca	1	5/28/2021 4:41:04 PM	R78766
Carbonate (As CaCO3)	ND	2.000	2.000		mg/L Ca	1	5/28/2021 4:41:04 PM	R78766
Total Alkalinity (as CaCO3)	498.3	20.00	20.00		mg/L Ca	1	5/28/2021 4:41:04 PM	R78766
SPECIFIC GRAVITY							Analyst: **CAS**	
Specific Gravity	1.002	0	0			1	5/27/2021 1:59:00 PM	R77711
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: **KS**	
Total Dissolved Solids	4600	40.0	40.0	*D	mg/L	1	5/29/2021 6:48:00 PM	60331

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

Qualifiers:

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D	Sample Diluted Due to Matrix
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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ANALYTICAL REPORT

June 16, 2021

Hall Environmental Analysis Laboratory

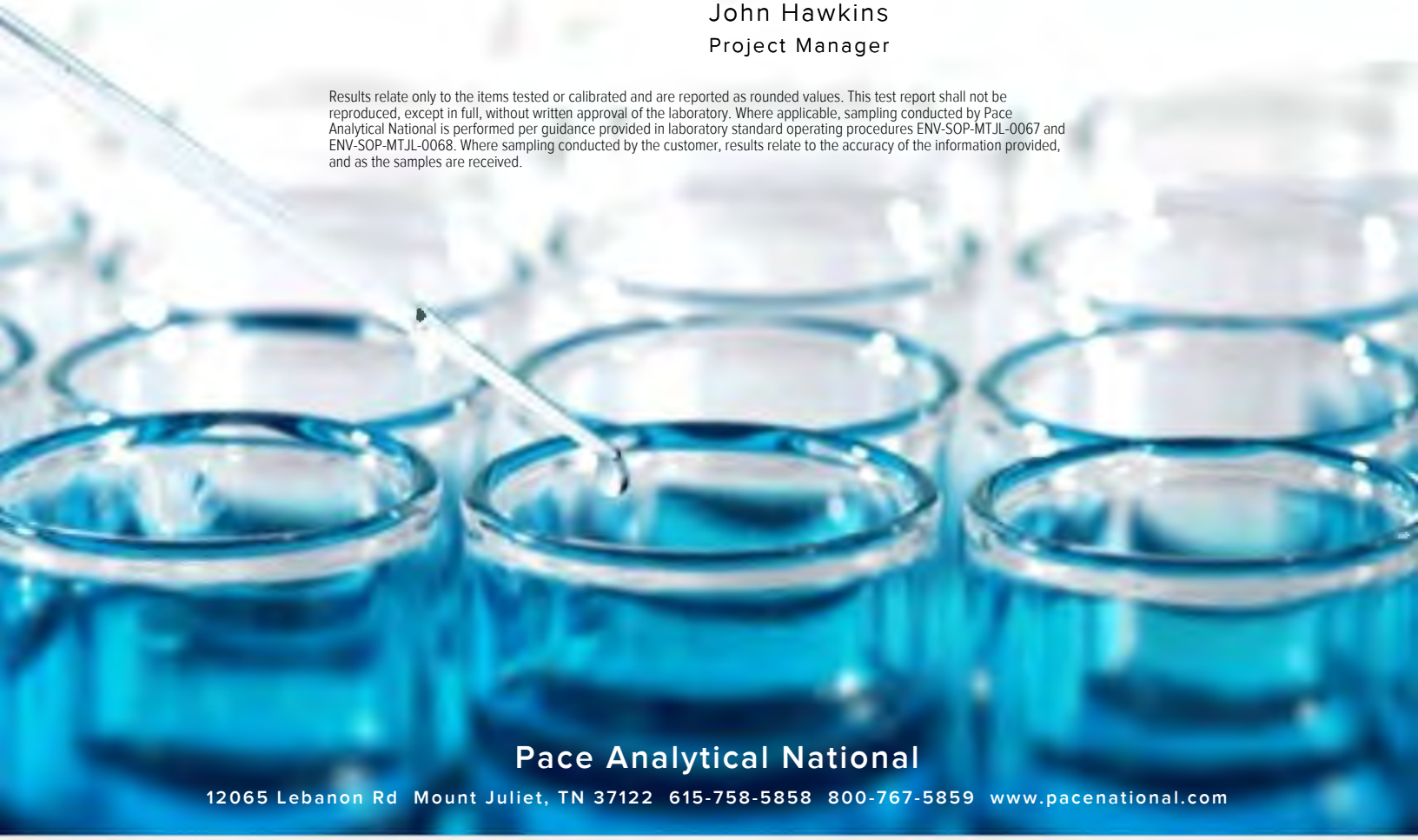
Sample Delivery Group:	L1358881
Samples Received:	05/27/2021
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

[Preliminary Report]

John Hawkins
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

2105A94-001 WDW-1,2,3&4 EFFLUENT L1358881-01 GW

Collected by	Collected date/time	Received date/time
	05/24/21 13:30	05/27/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2580	WG1680416	1	06/08/21 14:34	06/08/21 14:34	ARD	Mt. Juliet, TN
Wet Chemistry by Method 4500 CN E-2011	WG1683768	1	06/06/21 14:57	06/07/21 20:37	JER	Mt. Juliet, TN
Wet Chemistry by Method 9034-9030B	WG1679021	1	05/28/21 12:38	05/28/21 12:38	BJD	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1680109	1	05/31/21 14:05	05/31/21 14:05	BJD	Mt. Juliet, TN
Wet Chemistry by Method D93/1010A	WG1688472	1	06/16/21 00:00	06/16/21 00:00	KAB	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

[Preliminary Report]

John Hawkins
Project Manager

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.

All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Wet Chemistry by Method 2580

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	mV			date / time	
ORP	122	T8	1	06/08/2021 14:34	WG1680416

Wet Chemistry by Method 4500 CN E-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Reactive Cyanide	0.0319	J3	0.00500	1	06/07/2021 20:37	WG1683768

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Reactive Sulfide	ND		0.0500	1	05/28/2021 12:38	WG1679021

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
Corrosivity by pH	7.53	T8	1	05/31/2021 14:05	WG1680109

Sample Narrative:

L1358881-01 WG1680109: 7.53 at 21.3C

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	deg F			date / time	
Flashpoint	DNF at 170		1	06/16/2021 00:00	WG1688472

L1358881-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1358881-01 06/08/21 14:34 • (DUP) R3664579-3 06/08/21 14:34

Analyte	Original Result mV	DUP Result mV	Dilution	DUP Diff mV	DUP Qualifier	DUP Diff Limits mV
ORP	122	124	1	1.80		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3664579-1 06/08/21 14:34 • (LCSD) R3664579-2 06/08/21 14:34

Analyte	Spike Amount mV	LCS Result mV	LCSD Result mV	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	Diff mV	Diff Limits mV
ORP	106	106	104	99.5	97.6	86.0-105			2.00	20

Method Blank (MB)

(MB) R3664255-1 06/07/21 20:18

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Reactive Cyanide	U		0.00180	0.00500

L1358881-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1358881-01 06/07/21 20:37 • (DUP) R3664255-5 06/07/21 20:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Cyanide	0.0319	0.0225	1	34.6	J3	20

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3664255-6 06/07/21 20:44

Analyte	Original Result	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Cyanide		ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3664255-2 06/07/21 20:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Reactive Cyanide	0.100	0.0954	95.4	90.0-117	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3664255-3 06/07/21 20:24 • (MSD) R3664255-4 06/07/21 20:25

Analyte	Spike Amount mg/l	Original Result	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Reactive Cyanide	0.100		0.0941	0.0966	94.1	96.6	1	90.0-110			2.62	20

L1358891-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1358891-04 06/07/21 20:46 • (MS) R3664255-7 06/07/21 20:47 • (MSD) R3664255-8 06/07/21 20:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Reactive Cyanide	0.100	ND	0.0835	0.0984	83.5	98.4	1	90.0-110	J6		16.4	20

QUALITY CONTROL SUMMARY

L1358881-01

Method Blank (MB)

(MB) R3660519-1 05/28/21 12:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Reactive Sulfide	U		0.0250	0.0500

L1358657-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1358657-01 05/28/21 12:35 • (DUP) R3660519-5 05/28/21 12:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3660519-2 05/28/21 12:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Reactive Sulfide	0.500	0.447	89.4	85.0-115	

Wet Chemistry by Method 9040C

L1358881-01

Laboratory Control Sample (LCS)

(LCS) R3661340-1 05/31/21 14:05

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
Corrosivity by pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 21C

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3667721-1 06/16/21 00:00 • (LCSD) R3667721-2 06/16/21 00:00

Analyte	Spike Amount deg F	LCS Result deg F	LCSD Result deg F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Flashpoint	126	131	131	104	104	96.0-104			0.000	10

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.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

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.
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.
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
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1358881

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2105A94-001F	WDW-1,2,3 & 4 Effluent	500HDPE	Aqueous	5/24/2021 1:30:00 PM	1	RCI, ORP >12 -01
2	2105A94-001G	WDW-1,2,3 & 4 Effluent	500PLNAOH ZNAC	Aqueous	5/24/2021 1:30:00 PM	1	RCI, ORP >12 -01
3	2105A94-001H	WDW-1,2,3 & 4 Effluent	500PL-NaOH	Aqueous	5/24/2021 1:30:00 PM	1	RCI, ORP >12 RCL -01

B087

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 5/26/2021	Time: 8:53 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 05/27/21	Time: 09:30

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4.0 °C Attempt to Cool ? Cooled

Comments:

9362 4950 7044

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94
17-Jun-21

Client: Navajo Refining Company
Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R77690	RunNo: 77690							
Prep Date:	Analysis Date: 5/26/2021	SeqNo: 2757900	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R77690	RunNo: 77690							
Prep Date:	Analysis Date: 5/26/2021	SeqNo: 2757901	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	90	110			
Chloride	4.7	0.50	5.000	0	93.7	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.5	90	110			

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R79018	RunNo: 79018							
Prep Date:	Analysis Date: 6/10/2021	SeqNo: 2772021	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R79018	RunNo: 79018							
Prep Date:	Analysis Date: 6/10/2021	SeqNo: 2772022	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.5	0.50	10.00	0	95.3	90	110			

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R79060	RunNo: 79060							
Prep Date:	Analysis Date: 6/14/2021	SeqNo: 2774970	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R79060	RunNo: 79060							
Prep Date:	Analysis Date: 6/14/2021	SeqNo: 2774971	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	96.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: MB-60261	SampType: MBLK	TestCode: EPA Method 8081: Pesticides TCLP							
Client ID: PBW	Batch ID: 60261	RunNo: 77720							
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758706	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chlordane	ND	0.030								
Surr: Decachlorobiphenyl	0.0025		0.002500		101	41.7	129			
Surr: Tetrachloro-m-xylene	0.0016		0.002500		65.6	31.8	88.5			

Sample ID: MB-60261	SampType: MBLK	TestCode: EPA Method 8081: Pesticides TCLP							
Client ID: PBW	Batch ID: 60261	RunNo: 77720							
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758707	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chlordane	ND	0.030								
Surr: Decachlorobiphenyl	0.0025		0.002500		101	41.7	129			
Surr: Tetrachloro-m-xylene	0.0018		0.002500		73.5	31.8	88.5			

Sample ID: LCS-60261	SampType: LCS	TestCode: EPA Method 8081: Pesticides TCLP							
Client ID: LCSW	Batch ID: 60261	RunNo: 77720							
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758708	Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	0.0027		0.002500		108	41.7	129			
Surr: Tetrachloro-m-xylene	0.0016		0.002500		64.8	31.8	88.5			

Sample ID: LCS-60261	SampType: LCS	TestCode: EPA Method 8081: Pesticides TCLP							
Client ID: LCSW	Batch ID: 60261	RunNo: 77720							
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758709	Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	0.0028		0.002500		110	41.7	129			
Surr: Tetrachloro-m-xylene	0.0018		0.002500		73.1	31.8	88.5			

Sample ID: LCSD-60261	SampType: LCSD	TestCode: EPA Method 8081: Pesticides TCLP							
Client ID: LCSS02	Batch ID: 60261	RunNo: 77720							
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758711	Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	0.0028		0.002500		113	41.7	129	0	0	
Surr: Tetrachloro-m-xylene	0.0019		0.002500		75.3	31.8	88.5	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94
17-Jun-21

Client: Navajo Refining Company
Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: LCSD-60261 SampType: LCSD TestCode: EPA Method 8081: Pesticides TCLP
Client ID: LCSS02 Batch ID: 60261 RunNo: 77720
Prep Date: 5/26/2021 Analysis Date: 5/27/2021 SeqNo: 2758712 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	0.0029		0.002500		115	41.7	129	0	0	
Surr: Tetrachloro-m-xylene	0.0020		0.002500		81.3	31.8	88.5	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: 100ng lcs SampType: LCS TestCode: TCLP Volatiles by 8260B

Client ID: LCSW Batch ID: B78786 RunNo: 78786

Prep Date: Analysis Date: 6/1/2021 SeqNo: 2762772 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.020	0.00023	0.02000	0	97.6	70	130			
1,1-Dichloroethene	0.019	0.00013	0.02000	0	97.3	70	130			
Trichloroethene (TCE)	0.021	0.00020	0.02000	0	103	70	130			
Chlorobenzene	0.020	0.00014	0.02000	0	97.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.0098		0.01000		98.5	70	130			
Surr: 4-Bromofluorobenzene	0.011		0.01000		106	70	130			
Surr: Dibromofluoromethane	0.010		0.01000		100	70	130			
Surr: Toluene-d8	0.010		0.01000		101	70	130			

Sample ID: mb SampType: MBLK TestCode: TCLP Volatiles by 8260B

Client ID: PBW Batch ID: B78786 RunNo: 78786

Prep Date: Analysis Date: 6/1/2021 SeqNo: 2762774 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00023								
1,2-Dichloroethane (EDC)	ND	0.00022								
2-Butanone	ND	0.0011								
Carbon Tetrachloride	ND	0.00018								
Chloroform	ND	0.00013								
1,4-Dichlorobenzene	ND	0.00021								
1,1-Dichloroethene	ND	0.00013								
Tetrachloroethene (PCE)	ND	0.00036								
Trichloroethene (TCE)	ND	0.00020								
Vinyl chloride	ND	0.00020								
Chlorobenzene	ND	0.00014								
Surr: 1,2-Dichloroethane-d4	0.0097		0.01000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.011		0.01000		106	70	130			
Surr: Dibromofluoromethane	0.0099		0.01000		99.0	70	130			
Surr: Toluene-d8	0.010		0.01000		102	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94
17-Jun-21

Client: Navajo Refining Company
Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: lcs-1 99.5uS eC SampType: lcs TestCode: SM2510B: Specific Conductance
Client ID: LCSW Batch ID: R78766 RunNo: 78766
Prep Date: Analysis Date: 5/28/2021 SeqNo: 2761402 Units: µmhos/cm

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	99.50	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
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: MB-60292	SampType: MBLK	TestCode: EPA Method 7470: Mercury
Client ID: PBW	Batch ID: 60292	RunNo: 77719
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758623 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: LLLCS-60292	SampType: LCSLL	TestCode: EPA Method 7470: Mercury
Client ID: BatchQC	Batch ID: 60292	RunNo: 77719
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758624 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	84.9	50	150			J

Sample ID: LCS-60292	SampType: LCS	TestCode: EPA Method 7470: Mercury
Client ID: LCSW	Batch ID: 60292	RunNo: 77719
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758625 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	85	115			

Sample ID: LCSD-60292	SampType: LCSD	TestCode: EPA Method 7470: Mercury
Client ID: LCSS02	Batch ID: 60292	RunNo: 77719
Prep Date: 5/26/2021	Analysis Date: 5/27/2021	SeqNo: 2758626 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	99.1	85	115	1.65	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: MB-a	SampType: MBLK	TestCode: EPA Method 6010B: Dissolved Metals
Client ID: PBW	Batch ID: A78776	RunNo: 78776
Prep Date:	Analysis Date: 6/1/2021	SeqNo: 2762202 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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: A78776	RunNo: 78776
Prep Date:	Analysis Date: 6/1/2021	SeqNo: 2762204 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.1	80	120			
Magnesium	50	1.0	50.00	0	100	80	120			
Potassium	49	1.0	50.00	0	98.1	80	120			
Sodium	48	1.0	50.00	0	96.3	80	120			

Sample ID: LCSD-a	SampType: LCSD	TestCode: EPA Method 6010B: Dissolved Metals
Client ID: LCSS02	Batch ID: A78776	RunNo: 78776
Prep Date:	Analysis Date: 6/1/2021	SeqNo: 2762205 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	100	80	120	1.06	20	
Magnesium	50	1.0	50.00	0	101	80	120	0.870	20	
Potassium	49	1.0	50.00	0	98.8	80	120	0.719	20	
Sodium	48	1.0	50.00	0	96.4	80	120	0.105	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: MB-60290 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals

Client ID: PBW Batch ID: 60290 RunNo: 78776

Prep Date: 5/26/2021 Analysis Date: 6/1/2021 SeqNo: 2762144 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.030								
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.020								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID: LCS-60290 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals

Client ID: LCSW Batch ID: 60290 RunNo: 78776

Prep Date: 5/26/2021 Analysis Date: 6/1/2021 SeqNo: 2762146 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.030	0.5000	0	98.4	80	120			
Barium	0.48	0.0020	0.5000	0	95.4	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.9	80	120			
Chromium	0.46	0.0060	0.5000	0	92.6	80	120			
Lead	0.48	0.020	0.5000	0	95.5	80	120			
Selenium	0.50	0.050	0.5000	0	99.5	80	120			
Silver	0.10	0.0050	0.1000	0	99.5	80	120			

Sample ID: LCSD-60290 SampType: LCSD TestCode: EPA 6010B: Total Recoverable Metals

Client ID: LCSS02 Batch ID: 60290 RunNo: 78776

Prep Date: 5/26/2021 Analysis Date: 6/1/2021 SeqNo: 2762150 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.030	0.5000	0	97.5	80	120	0.908	20	
Barium	0.48	0.0020	0.5000	0	96.4	80	120	1.04	20	
Cadmium	0.48	0.0020	0.5000	0	96.9	80	120	1.04	20	
Chromium	0.47	0.0060	0.5000	0	93.8	80	120	1.33	20	
Lead	0.49	0.020	0.5000	0	97.5	80	120	2.08	20	
Selenium	0.49	0.050	0.5000	0	97.4	80	120	2.17	20	
Silver	0.10	0.0050	0.1000	0	99.9	80	120	0.371	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: mb-1 alk	SampType: mblk	TestCode: SM2320B: Alkalinity							
Client ID: PBW	Batch ID: R78766	RunNo: 78766							
Prep Date:	Analysis Date: 5/28/2021	SeqNo: 2761352	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: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity							
Client ID: LCSW	Batch ID: R78766	RunNo: 78766							
Prep Date:	Analysis Date: 5/28/2021	SeqNo: 2761353	Units: mg/L CaCO3						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	74.12	20.00	80.00	0	92.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A94

17-Jun-21

Client: Navajo Refining Company

Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Sample ID: MB-60331	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: PBW	Batch ID: 60331	RunNo: 78757
Prep Date: 5/28/2021	Analysis Date: 5/29/2021	SeqNo: 2760960 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-60331	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: LCSW	Batch ID: 60331	RunNo: 78757
Prep Date: 5/28/2021	Analysis Date: 5/29/2021	SeqNo: 2760961 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Navajo Refining | Work Order Number: 2105A94 | RcptNo: 1

Received By: Juan Rojas 5/26/2021 7:30:00 AM

Completed By: Cheyenne Cason 5/26/2021 8:48:39 AM

Reviewed By: ~~SPA~~ SPA 5.26.21 JR 5/26/21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
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	Yes ☑	No ☐	NA ☐
5. 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?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
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? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 3 1 (<2 or >12 unless noted)

Adjusted? Yes

Checked by: SPA 5.26.21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks: Added (0.4 / 0.5) ml HNO_3 to (001D / 001E) For 5PA 5.26.21 ~~ph~~ pH<2, metals analysis.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.5	Good				

SPA 5.26.21

Chain-of-Custody Record

Client: Navajo Refining Co.

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

Standard X Rush

Project Name:

Quarterly WDW-1, 2, 3 & 4 Inj Well

Project #: P.O. # 251841

Project Manager:

Randy Dade / Scott Denton

Sampler: Brady Hubbard

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.6-0.1=1.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2105A94	Specific Gravity, HCO3, CO3, Cl, SO4, TDS, pH, cond., Fl, Cation/anion bal., Br, Eh/40	VOCs/SW-846 Method 8260C (see attached list 'VOCs')	SVOCs/SW-846 Method 8270D (see attached list 'SVOCs')	R,C,I/40 CFR part 261	Metals/SW-846 Mthd 6010, 7470 (see attached list 'Metals')	Ca, K, Mg, Na/40 CFR 136.3	TCLP Metals, only /40 CFR Part 261/ SW-846 Method 1311	Chlordane 8081 A
5/24/21	13:30	Liquid	WDW-1, 2, 3 & 4 Effluent	3	Neat/H2SO4	001	X						X	
5/24/21	13:30	Liquid	WDW-1, 2, 3 & 4 Effluent	1	HNO3						X	X		
5/24/21	13:30	Liquid	WDW-1, 2, 3 & 4 Effluent	3	HCL			X						
5/24/21	13:30	Liquid	WDW-1, 2, 3 & 4 Effluent	2	Neat				X					
5/24/21	13:30	Liquid	WDW-1, 2, 3 & 4 Effluent	2	Neat					X				
5/24/21	13:30	Liquid	WDW-1, 2, 3 & 4 Effluent	1	Neat									x

Date	Time	Relinquished by	Received by	Date	Time
5-25-21	9:00	Brady Hubbard		5/25/21	900
5/25/21	1900			5/26/21	7:13

Remarks: Send results to Scott Denton, Mike Holder, Robert Combs and Randy Dade.

pH 7.14, 40.2C

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.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 54971

COMMENTS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 54971
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	UICI-8 QR FY21 Q4	12/14/2021

District I
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CONDITIONS

Action 54971

CONDITIONS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 54971
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
cchavez	None	12/14/2021