



November 5, 2024

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

RE: FFY 2024 4<sup>th</sup> Quarter Injection Report for HF Sinclair Navajo Refining LLC UIC Wells WDW-1, WDW-2, WDW-3 and WDW-4

Dear Mr. Chavez,

Enclosed, please find the federal fiscal year 2024 (FFY 2024) fourth quarter (Q4) report for HF Sinclair Navajo Refining LLC (HFSNR) fluids injected into WDW-1, WDW-2, WDW-3 and WDW-4. This report has been prepared in accordance with Class I Non-Hazardous Waste Injection Well Discharge Permit UICI-8 (approved December 2017) and covers data collection efforts from July 1, 2024 through September 30, 2024. Condition 2.I of the permit requires reporting of the following four items:

**Item #1: Physical, chemical and other relevant characteristics of injected fluids (per Condition 2.A)**

One sampling event occurred during FFY 2024 Q4 on August 22, 2024. Table 1 presents results for this event; the corresponding lab report is given in Attachment A. For parameters identified as toxic contaminants in 40 CFR 261.24(b) (EPA Hazardous waste No. D004 through D043), all results were less than the Toxicity Characteristic Leaching Procedure (TCLP) regulatory level and do not exhibit the characteristic of toxicity. TCLP parameters were analyzed as total fractions; results were less than the corresponding reporting level (RL).

**Item #2: Monthly average, maximum and minimum values for injection pressure, flow rate, injected volume, and annular pressure (per Condition 3.C)**

A summary of monthly injection pressure, flow rate, injected volume, and annular pressure for FFY 2024 Q4 is given in Table 2. Statistics for injection pressure, flow rate and annular pressure for each month were calculated from continuous monitoring recorded on an hourly basis. For example, a month containing 31 days would have a total of 744 hourly data results, assuming no issues with signal communication. For injection flowrate, hourly readings reported as 0 gpm were deleted from the database (representative of either a signal communication issue or a well down for maintenance, testing, etc.). Not including zero flowrate readings in the calculation of average flowrate provides a more conservative (higher) result for assessment of permit compliance. Beginning with this quarterly report, totalized injected volume was calculated differently than past historical quarterly reports to provide a more representative value. In the past, the monthly injected volume was calculated as the average monthly flowrate (from hourly readings) multiplied by the number of days in the corresponding month. Now (and going forward), the totalized injected volume for each hour is individually calculated (i.e., hourly flowrate in gpm multiplied by 60 minutes), and then the sum of all hourly volumes is determined for each month. This approach eliminates the issue with averaging zero flowrate values within a month (described above).

HF Sinclair Navajo Refining LLC  
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HFSNR disposed a total of 2,263,073 barrels of fluid into the four wells during FFY 2024 Q4. The total Q4 volume per well was:

- 882,754 barrels into WDW-1: 30-015-27592
- 106,848 barrels into WDW-2: 30-015-20894
- 390,063 barrels into WDW-3: 30-015-26575
- 883,408 barrels into WDW-4: 30-015-44677

In terms of Discharge Permit UICI-8 compliance, the hourly maximum injection pressures (occurring during FFY 2024 Q4) were within limits given in Condition 3.B as follows:

- WDW-1: max = 1,266 psi (limit = 1,585 psi)
- WDW-2: max = 1,206 psi (limit = 1,514 psi)
- WDW-3: max = 1,267 psi (limit = 1,530 psi)
- WDW-4: max = 369 psi (limit = 2,080 psi)

There were no significant losses as measured from the glycol expansion tanks Well Annulus Monitoring System (WAMS).

#### **Item #3: Groundwater monitoring well Information from Condition 2.B**

Discharge Permit UICI-8 Condition 2.B requires the installation of at least one downgradient monitoring well in the proximity of each injection well (WDW-1, 2, 3, and 4). Installation activities for monitoring wells at WDW-2, WDW-3, and WDW-4 were performed but no significant groundwater was encountered and the boreholes were plugged in accordance with the approved Work Plan. The final Hydrogeologic Investigation Report for activities at these three wells was submitted to NM OCD on April 16, 2024 and was approved by the agency on May 31, 2024. Discussions are on-going for access to WDW-1 with ConocoPhillips. After access authorization and installation completion (unless no water bearing zones are encountered), future quarterly reports will include the required WDW-1 monitoring well data which will also be representative of WDW-2, WDW-3, and WDW-4.

#### **Item #4: Continuous monitoring charts and information from Permit Condition 3.C**

Discharge Permit UICI-8 Condition 3.C requires the use of a continuous monitoring device to measure and record hourly values of injection pressure, injection rate, totalized injection volume, and annular pressure. HFSNR uses a digital recording device that can log the results of the above parameters at a user defined-frequency (i.e., can be greater or less than a one-hour interval). This recording/logging system is known as the "PI Historian" system and does not use any pen/chart apparatus described in Condition 3.C. The logged hourly data have been processed graphically and are given for each well in Figures 1 to 3 (July 2024), Figures 4 to 6 (August 2024), and Figures 7 to 9 (September 2024). As mentioned in Item #2 above, "gaps" in charted data reflect periods where signal communication issues occurred or when hourly injection flow was reported as 0 gpm. Archived spreadsheets of the FFY 2024 Q4 data used to generate the graphs are available upon request.

#### **Conclusions and Recommendations**

From the observations presented in the Items #1, #2, #3, and #4 above, HFSNR concludes that the injection of fluids (i.e., treated wastewater) into UIC Wells WDW-1, WDW-2, WDW-3, and WDW-4 during FFY 2024 Q4 was in compliance with the requirements and limitations given in Discharge Permit UICI-8. Specifically, the injection concentrations did not exhibit toxicity as regulated in Discharge Permit Condition 2.A (per reference of 40 CFR



261.24(b)). Further, injection pressures did not exceed limitations given Discharge Permit Condition 3.B for each well.

**Other UIC Activities During FFY 2024 Q4 (July 1, 2024 – September 30, 2024):**

1. In regard to the Groundwater Monitoring Wells per UICI-8 Discharge Permit Condition 2.B:
  - a. WDW-1: Negotiation of access agreements with ConocoPhillips continued.
2. In regard to Mechanical Integrity Testing (MIT), Fall Off Testing (FOT), and Remedial Work for the injection wells:
  - a. HFSNR performed an FOT test on August 20 to 22, 2024 at WDW-2. The final FOT report for WDW-2 was uploaded to the OCD website on September 20, 2024 under Action ID# 385331.
  - b. HFSNR performed an MIT test on August 20 to 22, 2024 at WDW-2. The final MIT report for WDW-2 was uploaded to the OCD website on September 20, 2024 under Action ID# 385332.
  - c. HFSNR performed an FOT test on July 9 to 11, 2024 at WDW-3. The final FOT report for WDW-3 was uploaded to the OCD website on August 11, 2024 under Action ID# 372420.
  - d. HFSNR performed an MIT test on July 9 to 11, 2024 at WDW-3. The final MIT report for WDW-3 was uploaded to the OCD website on August 11, 2024 under Action ID# 372423.
  - e. HFSNR performed an FOT test on September 3 to 6, 2024 at WDW-4. The final FOT report for WDW-4 was uploaded to the OCD website on October 11, 2024 under Action ID# 392090.
  - f. HFSNR performed an MIT test on September 3 to 6, 2024 at WDW-4. The final MIT report for WDW-4 was uploaded to the OCD website on October 11, 2024 under Action ID# 392083.
3. In regard to the renewal of UIC Class I Injection Well Discharge Permit UICI-8:
  - a. HFSNR provided comments on the August 2, 2024 draft Permit to OCD on September 5, 2024.
  - b. HFSNR initiated a response to OCD's September 30, 2024 request for verification of each well's location (i.e., latitude/longitude) via submission of Forms C-103 and C-102 (Well Location and Acreage Dedication Plat). C-103 and C-102 forms for all four wells submitted on October 15, 2024 (FFY 2025 Q1).

**Planned UIC Activities for FFY 2025 Q1 (October 1, 2024 – December 31, 2024):**

1. Obtain access agreement from ConocoPhillips for the installation of an OCD-approved groundwater monitoring well at WDW-1. Pursue subsequent OSE monitor well permit and plan schedule for contracted driller mobilization.
2. WDW-2, WDW-3 and WDW-4 well stimulations are being considered for Q1 of FFY 2025. Whether or not stimulations are warranted will be determined based on the results of 2024 reservoir testing.

This report is signed and certified in accordance with NMAC Section 20.6.2.5101.G. If there are any questions or comments, please contact Teresa Alba at 575-746-5391.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Case Hinkins', is written over a light blue horizontal line.

Case Hinkins  
Environmental Manager  
HF Sinclair Navajo Refining LLC

HF Sinclair Navajo Refining LLC  
501 East Main, Artesia, NM 88210  
575-748-3311 | HFSinclair.com

**TABLE 1. FFY 2024 Q4 CONCENTRATIONS OF WASTEWATER INJECTED INTO WELLS WDW-1, WDW-2, WDW-3, AND WDW-4**

" &lt; " = value less than the laboratory reporting level (RL)

Parameter	Units	UICI-8 Condition 2.A Regulatory Level	8/22/2024 Concentration
Alkalinity, bicarbonate	mg/L	--	600.0
Alkalinity, carbonate	mg/L	--	<2.0
Alkalinity, total	mg/L	--	600.0
Conductivity	uS/cm	--	5600
Cyanide (Reactivity)	mg/L	--	0.062
Flashpoint (Ignitability)	deg F	--	>180
Oxidation Reduction Potential	mV	--	110
pH (Corrosivity)	su	--	7.6
Specific Gravity	su	--	1.0025
Sulfide (Reactivity)	mg/L	--	0.43
Total Dissolved Solids	mg/L	--	4300
Total Suspended Solids	mg/L	--	28
Bromide	mg/L	--	0.54
Chloride	mg/L	--	420
Fluoride	mg/L	--	45
Nitrate	mg/L	--	--
Nitrate + Nitrite	mg/L	--	<1.0
Nitrite	mg/L	--	--
Phosphorus, Ortho PO4	mg/L	--	--
Sulfate	mg/L	--	1900
Calcium	mg/L	--	500
Magnesium	mg/L	--	220
Potassium	mg/L	--	170
Sodium	mg/L	--	700
Arsenic	mg/L	TCLP=5	<5
Barium	mg/L	TCLP=100	<100
Cadmium	mg/L	TCLP=1	<1
Chromium	mg/L	TCLP=5	<5
Lead	mg/L	TCLP=5	<5
Mercury	mg/L	TCLP=0.2	<0.02
Selenium	mg/L	TCLP=1	<1
Silver	mg/L	TCLP=5	<5
Chlordane	mg/L	TCLP=0.03	<0.03
1,1-Dichloroethene	mg/L	TCLP=0.7	<0.7
1,2-Dichloroethane	mg/L	TCLP=0.5	<0.5
1,4-Dichlorobenzene	mg/L	TCLP=7.5	<7.5
2,4,5-Trichlorophenol	mg/L	TCLP=400	<400
2,4,6-Trichlorophenol	mg/L	TCLP=2	<2
2,4-Dinitrotoluene	mg/L	TCLP=0.13	<0.13
2-Butanone	mg/L	TCLP=200	<200
2-Methylphenol	mg/L	TCLP=200	<200
3+4-Methylphenol	mg/L	TCLP=200	<200
Benzene	mg/L	TCLP=0.5	<0.5
Carbon tetrachloride	mg/L	TCLP=0.5	<0.5
Chlorobenzene	mg/L	TCLP=100	<100
Chloroform	mg/L	TCLP=6	<6
Cresols	mg/L	TCLP=200	<200
Hexachlorobenzene	mg/L	TCLP=0.13	<0.13
Hexachlorobutadiene	mg/L	TCLP=0.5	<0.5
Hexachloroethane	mg/L	TCLP=3	<3
Nitrobenzene	mg/L	TCLP=2	<2
Pentachlorophenol	mg/L	TCLP=100	<100
Pyridine	mg/L	TCLP=5	<5
Tetrachloroethene	mg/L	TCLP=0.7	<0.7
Trichloroethene	mg/L	TCLP=0.5	<0.5
Vinyl chloride	mg/L	TCLP=0.2	<0.2

TCLP = Toxicity Characteristic Leaching Procedure with regulatory level given in 40 CFR 261.24(b)

TABLE 2. FFY 2024 FOURTH QUARTER MONTHLY INJECTION PRESSURE, FLOW RATE, ANNULAR PRESSURE, AND VOLUME

Based on continuous monitors that record pressure and flow rate data on an hourly basis (per UICI-8 Condition 3.C)

Month	Injection Pressure			Injection Flowrate			Annular Pressure			Totalized Injected Volume	
	Average (psi)	Maximum (psi)	Minimum (psi)	Average (gpm)	Maximum (gpm)	Minimum (gpm)	Average (psi)	Maximum (psi)	Minimum (psi)	Monthly (barrels)	Cumulative (barrels)
<b>30-015-27592 WDW-1</b>											52,095,832
	1,246	1,356	944	230	653	0.30	510	718	204	231,308	52,327,140
	1,266	1,400	1,150	450	653	0.26	580	799	0.04	401,159	52,728,298
	1,235	1,400	929	279	653	0.14	627	1,029	190	250,287	52,978,586
<b>30-015-20894 WDW-2</b>											32,034,589
	1,135	1,302	613	26	52	0.09	558	783	181	19,675	32,054,264
	1,203	1,325	576	43	71	0.12	719	974	215	42,055	32,096,319
	1,206	1,385	513	47	472	0.19	635	1,112	161	45,118	32,141,437
<b>30-015-26575 WDW-3</b>											25,149,705
	1,206	1,540	713	122	145	72	694	840	42	129,245	25,278,950
	1,267	1,355	1,040	133	153	94	808	1,013	621	141,695	25,420,645
	1,211	1,376	939	121	154	68	512	800	39	119,123	25,539,768
<b>30-015-44677 WDW-4</b>											15,302,320
	369	438	273	306	390	143	291	423	77	325,721	15,628,041
	344	416	325	270	365	231	321	437	180	287,041	15,915,083
	347	453	236	288	413	1.82	184	409	11	270,646	16,185,729

Figure 1. FFY 2024 Q4 Injection Pressure - July 2024

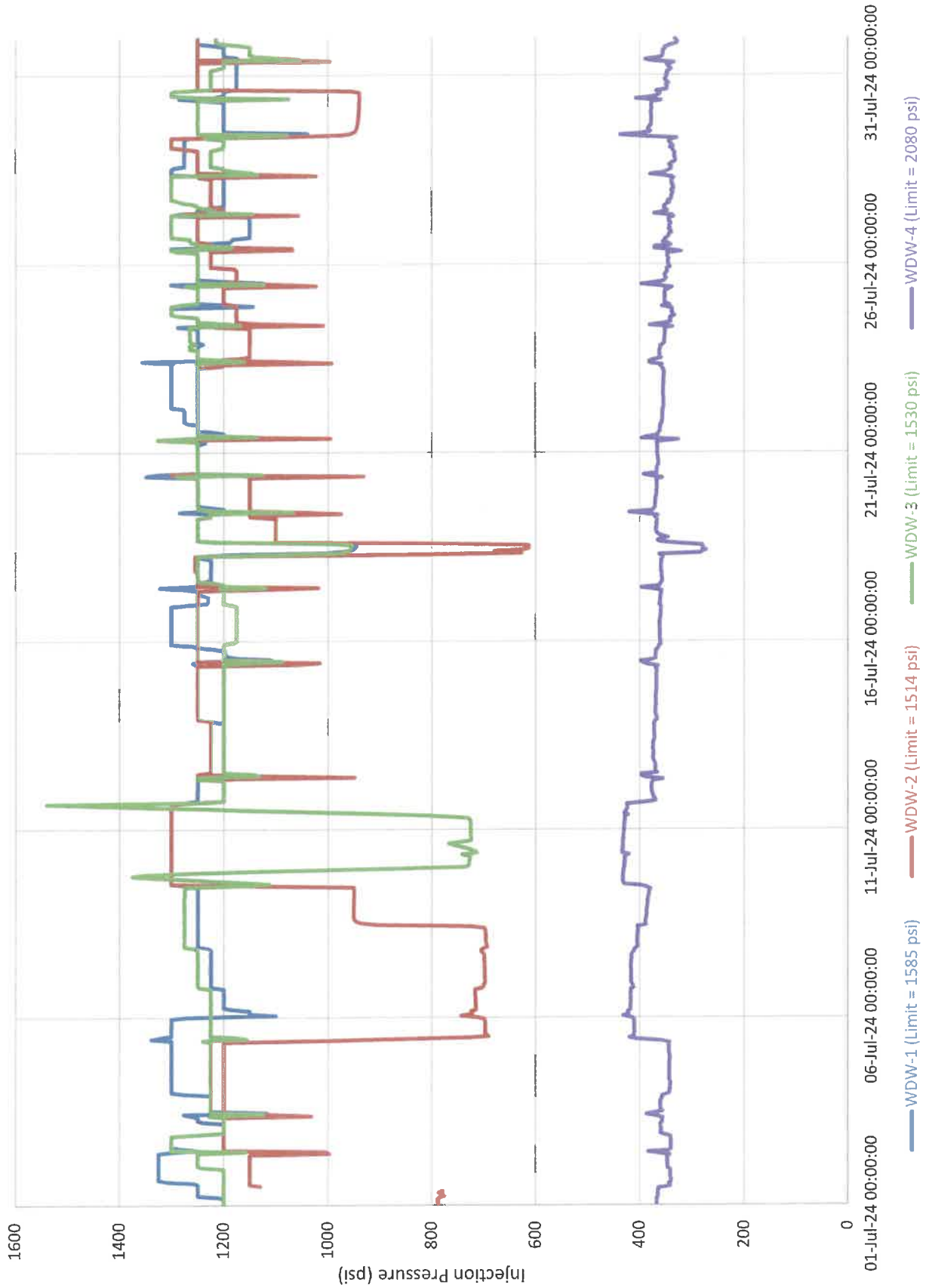




Figure 2. FFY 2024 Q4 Annular Pressure - July 2024

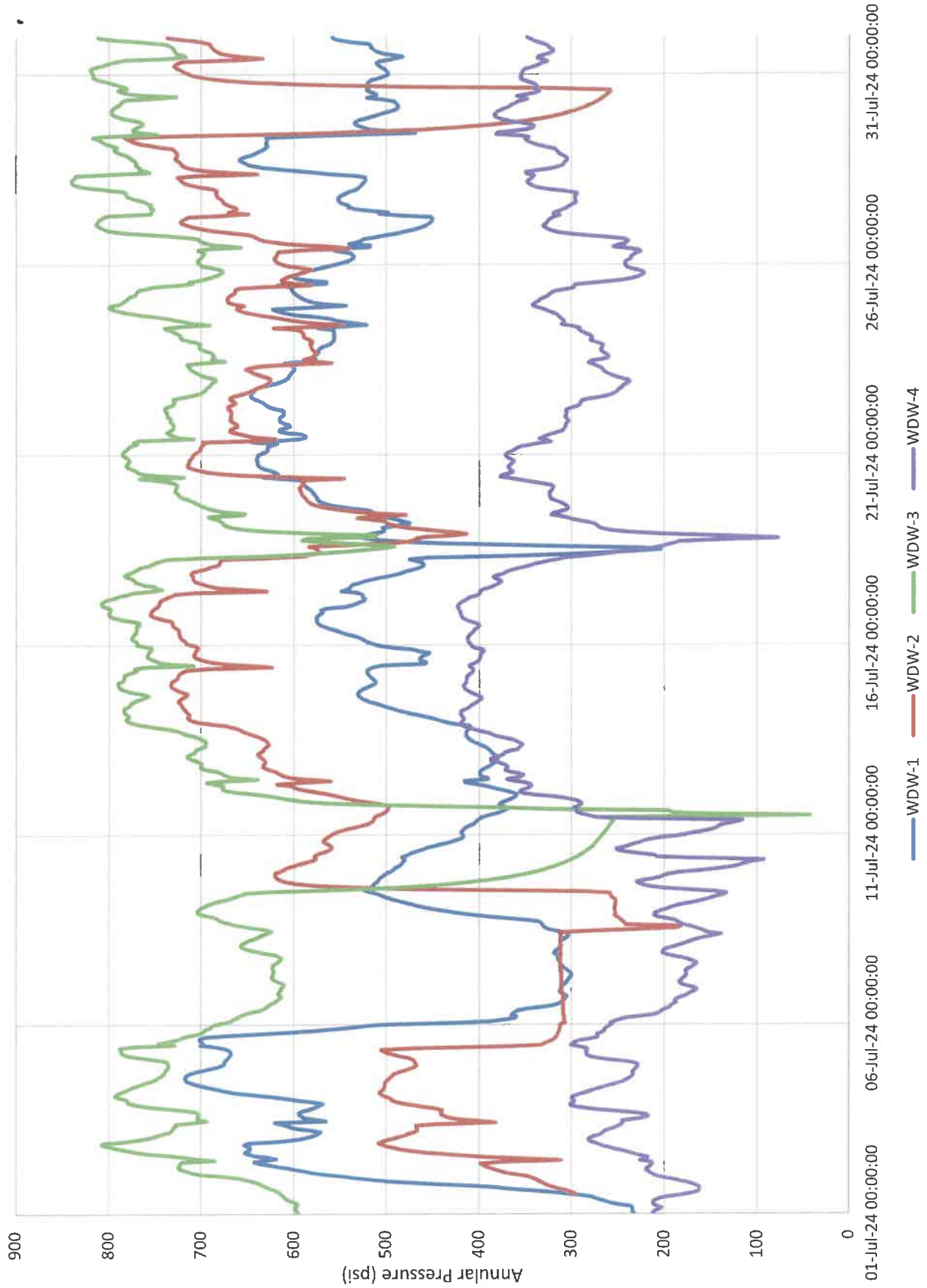


Figure 3. FFY 2024 Q4 Injection Flowrate - July 2024

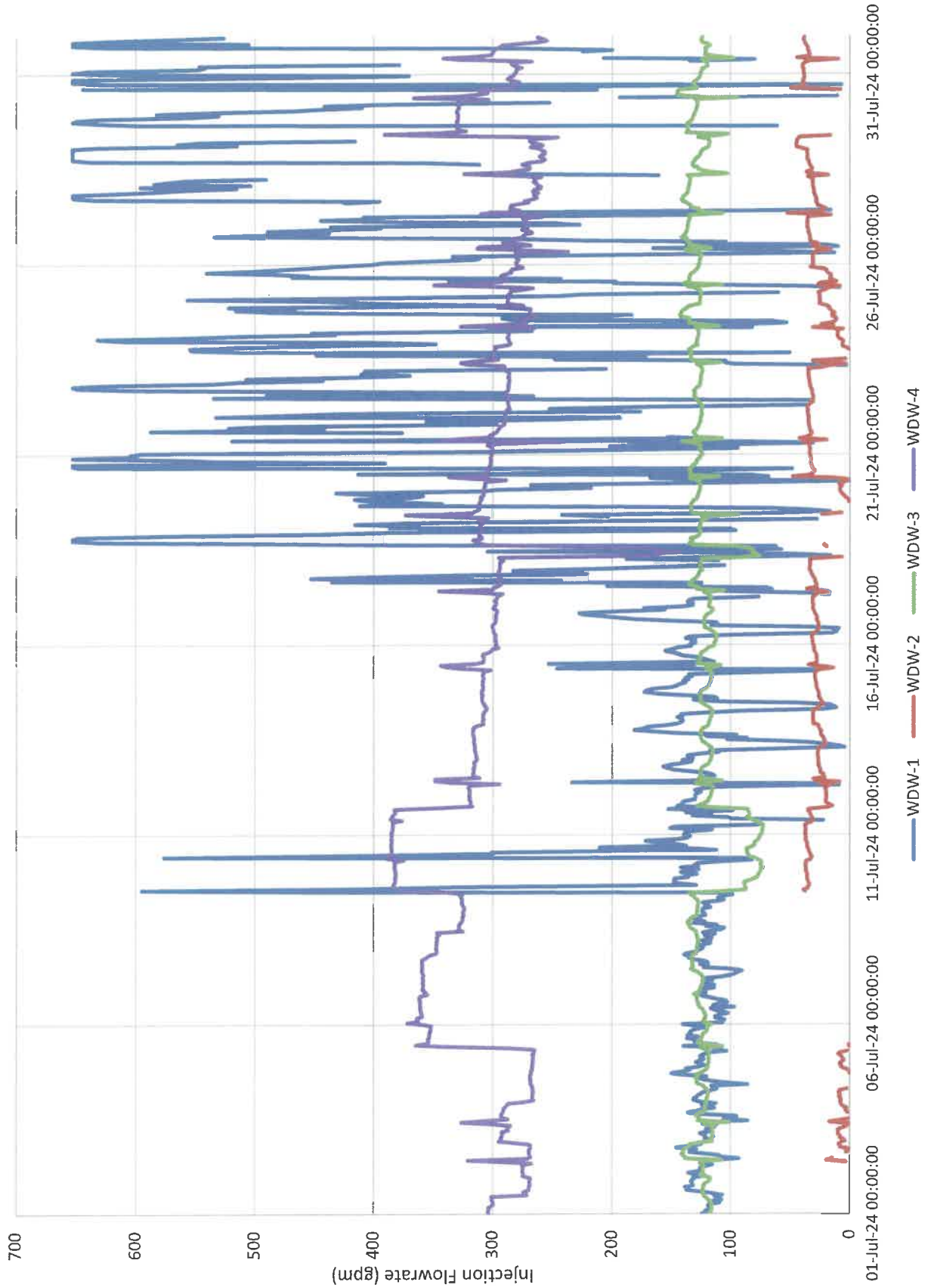




Figure 4. FFY 2024 Q4 Injection Pressure - Aug 2024

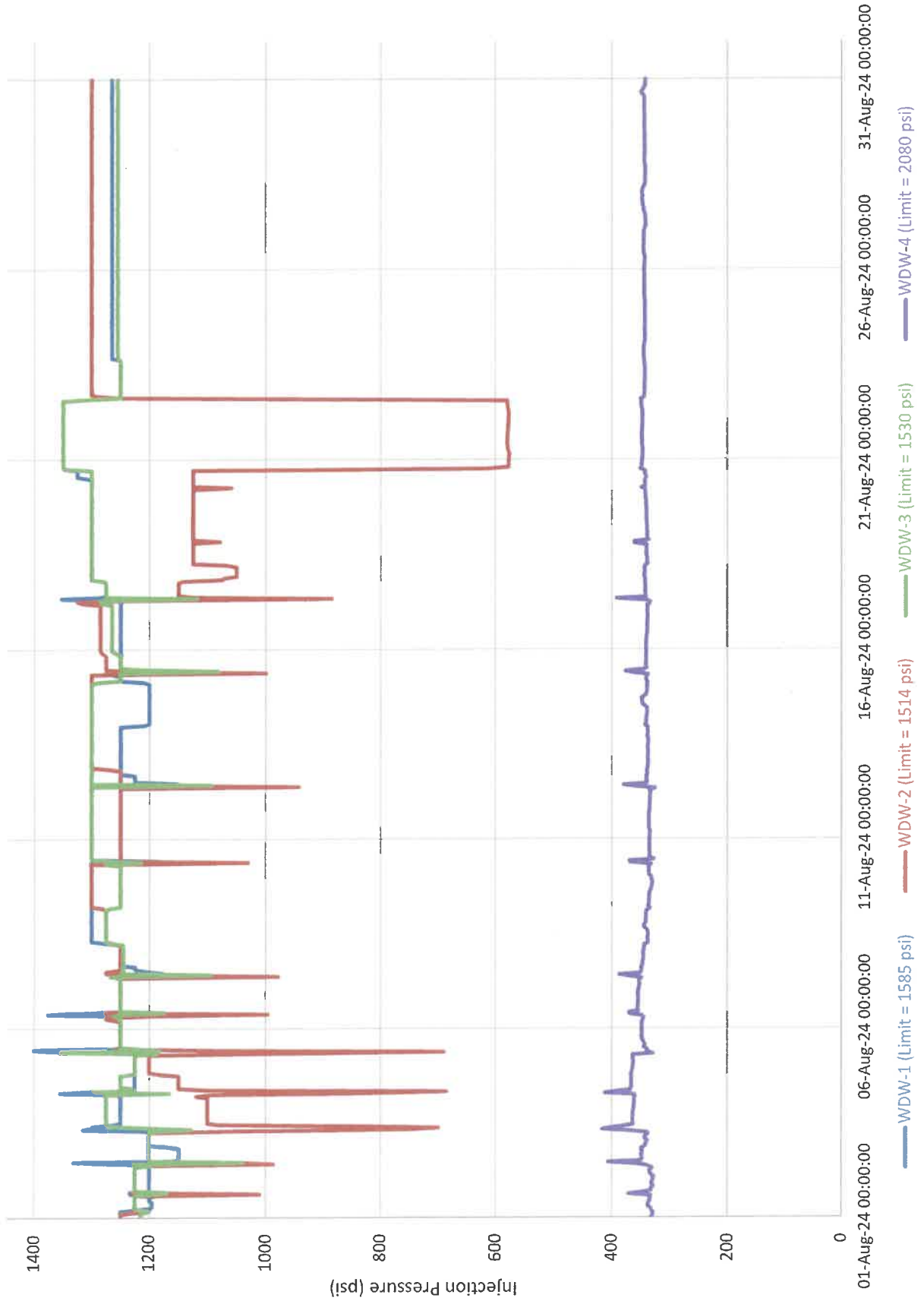


Figure 5. FFY 2024 Q4 Annular Pressure - Aug 2024

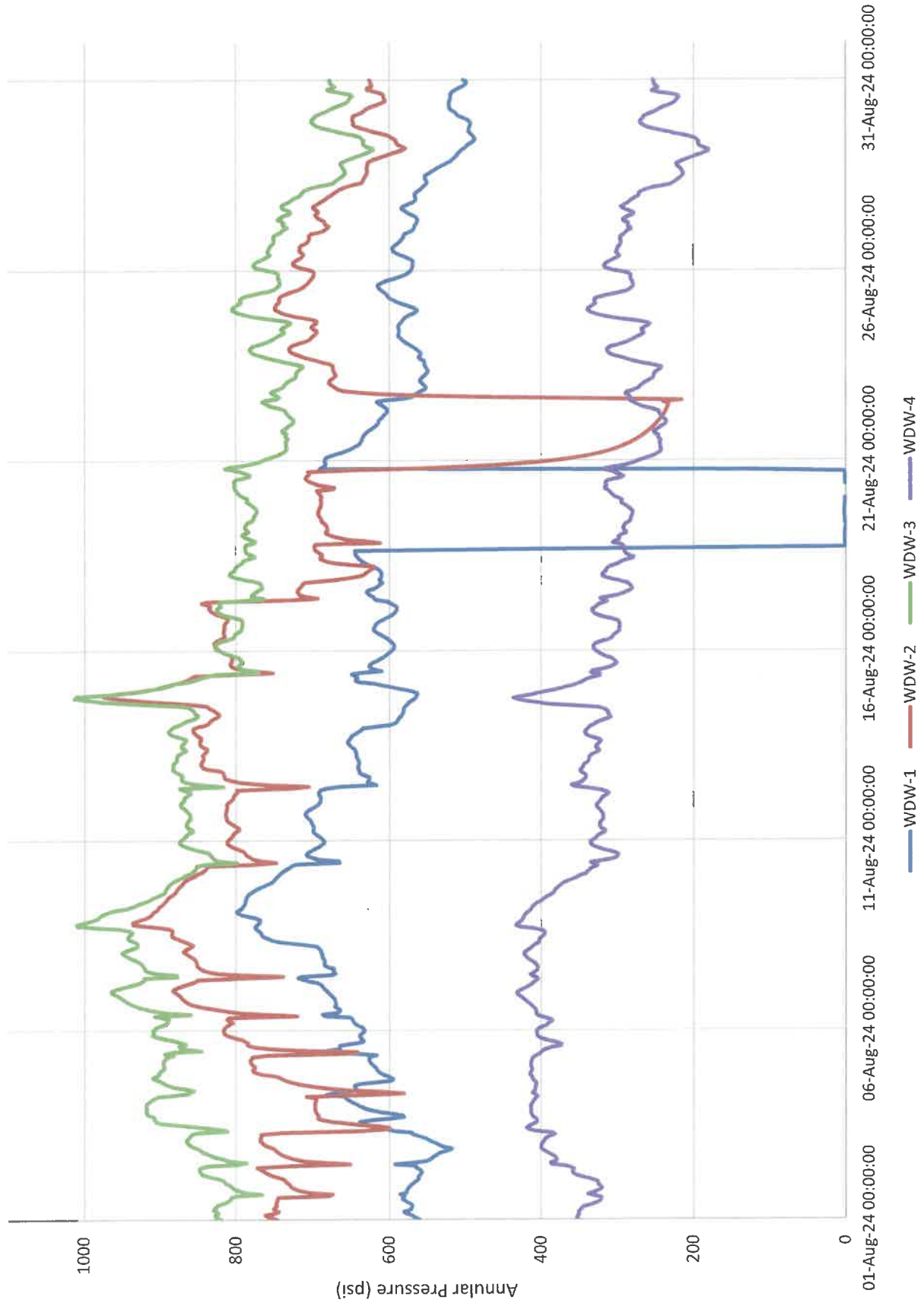


Figure 6. FFY 2024 Q4 Injection Flowrate - Aug 2024

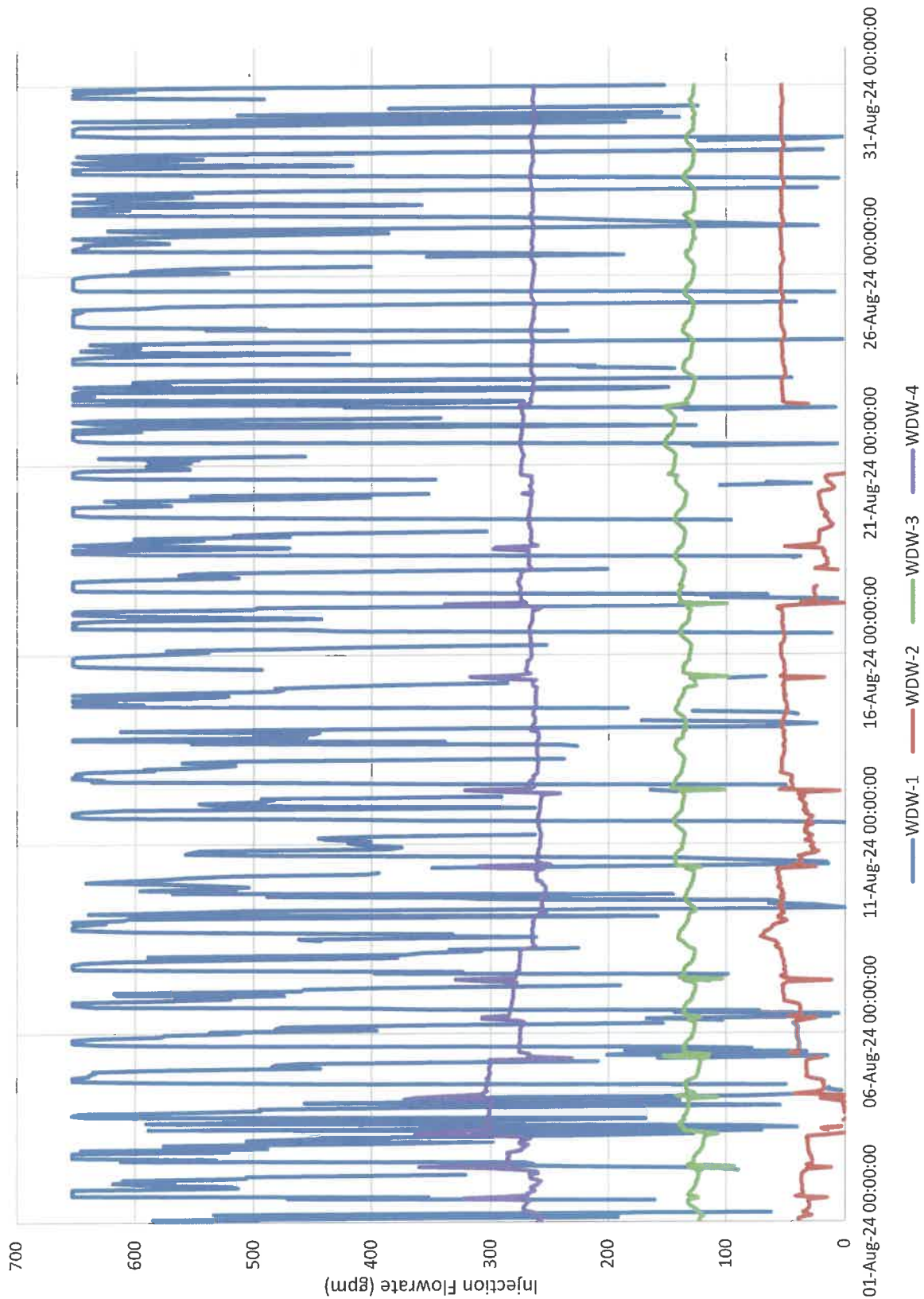


Figure 7. FFY 2024 Q4 Injection Pressure - Sep 2024

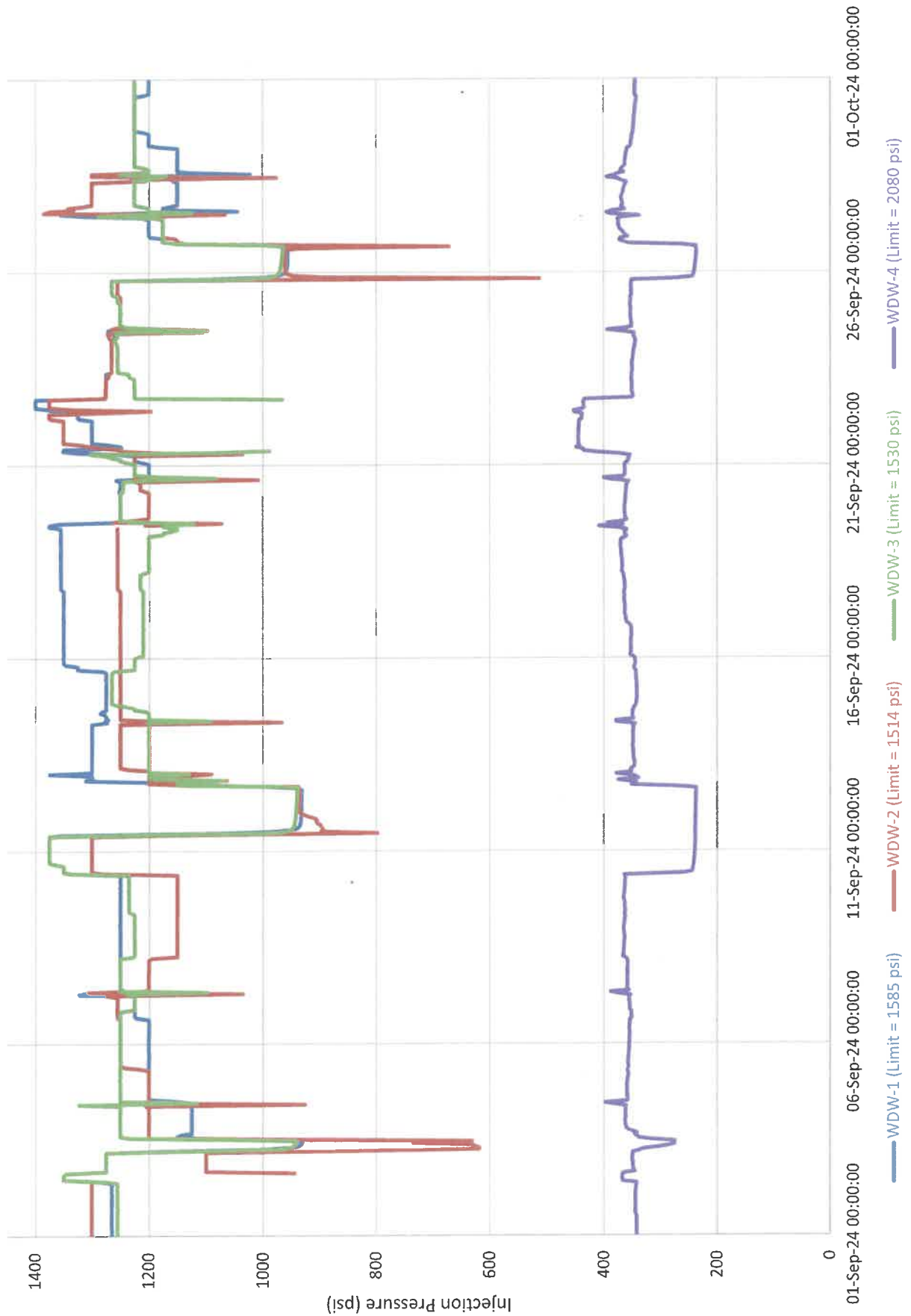


Figure 8. FFY 2024 Q4 Annular Pressure - Sep 2024

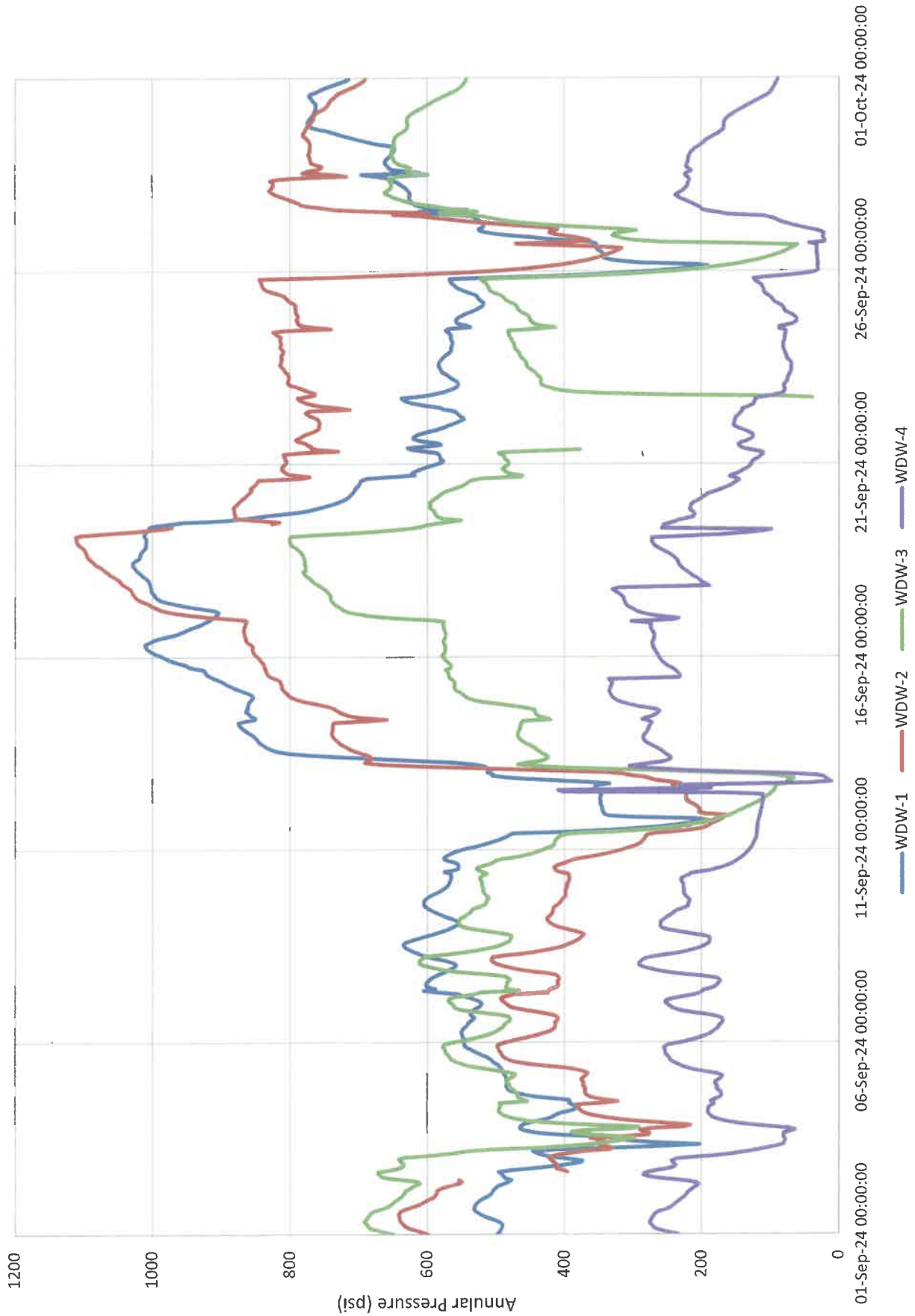
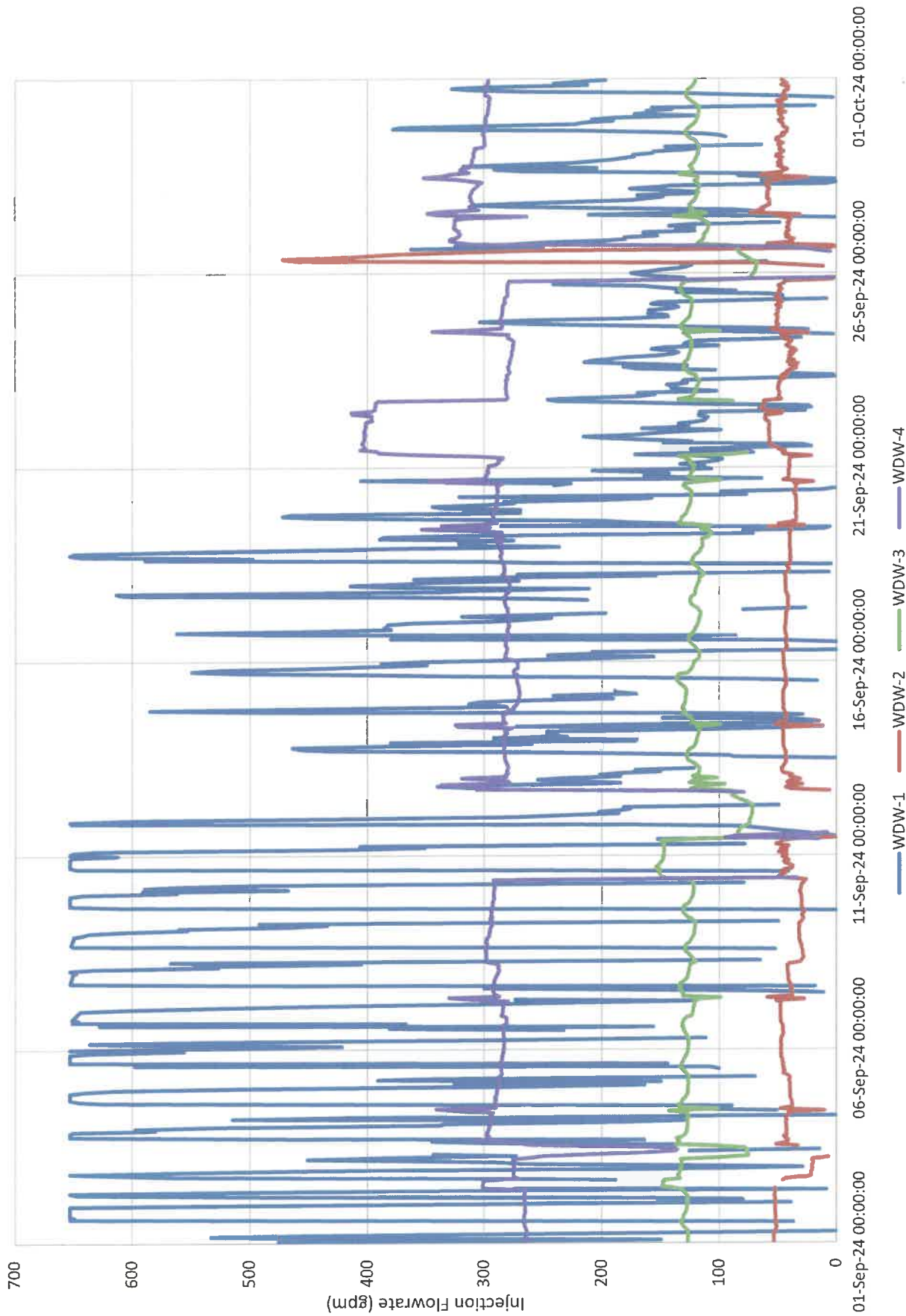




Figure 9. FFY 2024 Q4 Injection Flowrate - Sep 2024





## **ATTACHMENT A**

Analytical Lab Report(s)



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Teresa Alba  
HF Sinclair Asphalt Navajo Refining LLC  
PO BOX 159  
Artesia, New Mexico 88211

Generated 10/16/2024 11:46:53 AM Revision 1

## JOB DESCRIPTION

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

## JOB NUMBER

885-10556-1

Eurofins Albuquerque  
4901 Hawkins NE  
Albuquerque NM 87109

# Eurofins Albuquerque

## Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## Authorization



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Revision 1

Authorized for release by  
Jackie Bolte, Project Manager  
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(505)345-3975

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Laboratory Job ID: 885-10556-1

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Definitions/Glossary . . . . .	4
Case Narrative . . . . .	5
Client Sample Results . . . . .	6
Action Limit Summary . . . . .	9
QC Sample Results . . . . .	10
QC Association Summary . . . . .	23
Lab Chronicle . . . . .	27
Certification Summary . . . . .	28
Chain of Custody . . . . .	30
Receipt Checklists . . . . .	32



## Definitions/Glossary

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Qualifiers

## GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

## HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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## Case Narrative

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

**Job ID: 885-10556-1**

**Eurofins Albuquerque**

### Job Narrative 885-10556-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The sample was received on 8/24/2024 7:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.3°C.

TCLP parameters were requested for the sample in this report. Per the TCLP Method 1311, "If a total analysis of the waste demonstrates that individual analytes are not present in the waste, or that they are present but at such low concentrations that the appropriate regulatory levels could not possibly be exceeded, the TCLP need not be run". All TCLP compounds are reported as totals in this report, at the TCLP Limits, since the low solids content did not require filtration. The TCLP term is used in the method header; this is used to represent that the compounds listed are the specific TCLP compounds and that these compounds are reported at the TCLP regulatory limits. The cations were filtered using a 0.45um filter for the C/A balance determination.

#### Specific Gravity

The specific gravity result for sample WDW-1,2,3 & 4 Effluent is 1.0025.

#### GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### Pesticides

Method 8081B: The following samples were prepared outside of preparation holding time due to analyst bringing the original extraction batch samples and QC to the wrong final volume: WDW-1,2,3 & 4 Effluent (885-10556-1).

Method 8081B: Surrogate recovery for the following samples were outside control limits: WDW-1,2,3 & 4 Effluent (885-10556-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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## Client Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

Client Sample ID: WDW-1,2,3 &amp;4 Effluent

Lab Sample ID: 885-10556-1

Date Collected: 08/22/24 13:05

Matrix: Water

Date Received: 08/24/24 07:30

## Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	4.5	ug/L			09/05/24 20:09	200
Carbon tetrachloride	ND		20	3.5	ug/L			09/05/24 20:09	200
Chlorobenzene	ND		20	9.2	ug/L			09/05/24 20:09	200
1,4-Dichlorobenzene	ND		20	2.1	ug/L			09/05/24 20:09	200
1,2-Dichloroethane (EDC)	ND		20	6.0	ug/L			09/05/24 20:09	200
1,1-Dichloroethene	ND		20	4.0	ug/L			09/05/24 20:09	200
2-Butanone	ND		200	41	ug/L			09/05/24 20:09	200
Tetrachloroethene (PCE)	ND		20	3.6	ug/L			09/05/24 20:09	200
Trichloroethene (TCE)	ND		20	4.1	ug/L			09/05/24 20:09	200
Vinyl chloride	ND		20	6.4	ug/L			09/05/24 20:09	200
Chloroform	ND		20	5.0	ug/L			09/05/24 20:09	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 130		09/05/24 20:09	200
Toluene-d8 (Surr)	100		70 - 130		09/05/24 20:09	200
4-Bromofluorobenzene (Surr)	101		70 - 130		09/05/24 20:09	200
Dibromofluoromethane (Surr)	99		70 - 130		09/05/24 20:09	200

## Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		10	4.7	ug/L		08/28/24 07:09	09/06/24 17:26	1
3 & 4 Methylphenol	ND		10	4.9	ug/L		08/28/24 07:09	09/06/24 17:26	1
2,4-Dinitrotoluene	ND		5.0	5.0	ug/L		08/28/24 07:09	09/06/24 17:26	1
Hexachlorobenzene	ND		20	4.6	ug/L		08/28/24 07:09	09/06/24 17:26	1
Hexachlorobutadiene	ND		20	11	ug/L		08/28/24 07:09	09/06/24 17:26	1
Hexachloroethane	ND		20	11	ug/L		08/28/24 07:09	09/06/24 17:26	1
Nitrobenzene	ND		5.0	3.6	ug/L		08/28/24 07:09	09/06/24 17:26	1
Pentachlorophenol	ND		20	15	ug/L		08/28/24 07:09	09/06/24 17:26	1
Pyridine	ND		20	2.6	ug/L		08/28/24 07:09	09/06/24 17:26	1
2,4,5-Trichlorophenol	ND		10	5.1	ug/L		08/28/24 07:09	09/06/24 17:26	1
2,4,6-Trichlorophenol	ND		10	4.3	ug/L		08/28/24 07:09	09/06/24 17:26	1
Cresols, Total	ND		10	4.9	ug/L		08/28/24 07:09	09/06/24 17:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)	44		15 - 130	08/28/24 07:09	09/06/24 17:26	1
2-Fluorophenol (Surr)	42		15 - 130	08/28/24 07:09	09/06/24 17:26	1
2,4,6-Tribromophenol (Surr)	44		15 - 130	08/28/24 07:09	09/06/24 17:26	1
Nitrobenzene-d5 (Surr)	73		29 - 130	08/28/24 07:09	09/06/24 17:26	1
2-Fluorobiphenyl (Surr)	71		20 - 130	08/28/24 07:09	09/06/24 17:26	1
p-Terphenyl-d14 (Surr)	71		41 - 130	08/28/24 07:09	09/06/24 17:26	1

## Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane	ND	H	1.0	0.50	ug/L		09/03/24 07:00	09/06/24 10:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	51	S1-	53 - 130	09/03/24 07:00	09/06/24 10:05	1
Tetrachloro-m-xylene	133	S1+	18 - 130	09/03/24 07:00	09/06/24 10:05	1

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## Client Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

Client Sample ID: WDW-1,2,3 &amp; 4 Effluent

Lab Sample ID: 885-10556-1

Date Collected: 08/22/24 13:05

Matrix: Water

Date Received: 08/24/24 07:30

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.54		0.10	0.050	mg/L			08/26/24 18:11	1
Chloride	420		50	25	mg/L			09/06/24 00:11	100
Nitrate Nitrite as N	0.33	J	1.0	0.11	mg/L			08/26/24 21:13	5
Sulfate	1900		50	25	mg/L			09/06/24 00:11	100
Fluoride	45		2.0	0.92	mg/L			08/26/24 18:56	20

## Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	500		100	6.5	mg/L			09/16/24 14:21	100
Magnesium	220		100	2.4	mg/L			09/13/24 14:51	100
Potassium	170		100	12	mg/L			09/16/24 11:26	100
Sodium	700		100	23	mg/L			09/16/24 11:26	100

## Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0087	J	0.010	0.0050	mg/L		08/27/24 11:40	09/06/24 16:52	10
Barium	0.047		0.010	0.0050	mg/L		08/27/24 11:40	09/16/24 13:15	10
Cadmium	ND		0.010	0.0050	mg/L		08/27/24 11:40	09/06/24 16:52	10
Chromium	ND		0.010	0.0050	mg/L		08/27/24 11:40	09/06/24 16:52	10
Lead	ND		0.010	0.0060	mg/L		08/27/24 11:40	09/06/24 16:52	10
Selenium	0.035		0.010	0.0080	mg/L		08/27/24 11:40	09/06/24 16:52	10
Silver	ND		0.010	0.0050	mg/L		08/27/24 11:40	09/16/24 13:15	10

## Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		08/30/24 11:01	08/31/24 16:17	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint (SW846 1010)	>180		1.00	1.00	Degrees F			08/27/24 12:23	1
Total Dissolved Solids (SM 2540C)	4300		500	250	mg/L			08/29/24 08:03	1
pH (SW846 9040C)	7.6	HF			SU			09/03/24 18:01	1
Temperature (SW846 9040C)	11.9	HF			Degrees C			09/03/24 18:01	1
Corrosivity (SW846 9040C)	7.6	HF			SU			09/03/24 18:01	1
Cyanide, Total (EPA Kelada 01)	0.062		0.0050	0.0020	mg/L			08/29/24 16:46	1
Total Alkalinity as CaCO3 (SM 2320B)	600		20	20	mg/L			09/04/24 16:09	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	600		20	20	mg/L			09/04/24 16:09	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		2.0	2.0	mg/L			09/04/24 16:09	1
Specific Conductance (SM 2510B)	5600		10	10	umhos/cm			09/06/24 12:57	1
Total Suspended Solids (SM 2540D)	28	H	8.0	8.0	mg/L			09/19/24 15:07	1
Specific Gravity (SM 2710F)	1.0	H			NONE			09/25/24 14:27	1
Sulfide (SM 4500 S2 D)	0.43		0.10	0.040	mg/L			08/27/24 18:26	1

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## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	WDW-1,2,3,&4 Effluent 10556-1									
	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
CATIONS										
Sodium	700	30.45								
Potassium	170	4.35								
Calcium	500	24.95								
Magnesium	220	18.11								
<b>Total Cations</b>		<b>77.85</b>								
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sulfate	1900	39.56								
Chloride	420	11.85								
Bicarbonate (CaCO <sub>3</sub> )	600	11.99								
Carbonate (CaCO <sub>3</sub> )										
Phosphate (P)										
Nitrite (N)										
Nitrate (N)	0.33	0.02								
Fluoride	45	2.37								
Bromide	0.54	0.01								
<b>Total Anions</b>		<b>65.80</b>								
Elect. Cond. (µMhos/cm)	5600									
<b>CATION/ANION RATIO</b>		<b>1.18</b>								
% Difference		8								
<b>TOTAL DISSOLVED SOLIDS RATIOS</b>										
TDS (measured)	4300									
TDS (calculated)	4317									
Ratio meas TDS:calc TDS		1.0								
Ratio Meas. TDS:EC		0.77								
Ratio Calc. TDS:EC		0.77								
Ratio of anion sum:EC		1.2								
Ratio of cation sum:EC		1.4								

\* Analyte not detected (below method detection limit).

\*\* Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

**GENERALLY ACCEPTED RANGES**

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, &gt;10 meq/L - 5%

Ratio measured TDS:calculated TDS -- 1.0-1.2. Ratio Calculated TDS:EC -- 0.55-0.7. Ratio of anion sum:EC -- 0.9-1.1.

Ratio of cation sum:EC -- 0.9-1.1



## Action Limit Summary

Client: HF Sinclair Asphalt Navajo Refining LLC  
 Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

Client Sample ID: WDW-1,2,3 &amp;4 Effluent

Lab Sample ID: 885-10556-1

## POTENTIAL STLC / TCLP / TLLC LIMITS EXCEEDANCE

STLC limits in boxes signify the result exceeds 10x STLC limit. TCLP limits in boxes signify the result exceeds 20x TCLP limit

Analyte	Result	Qualifier	Unit	TCLP Limit	RL	Method	Prep Type
Benzene	ND		ug/L	500.0	20	8260B	Total/NA
Carbon tetrachloride	ND		ug/L	500.0	20	8260B	Total/NA
Chlorobenzene	ND		ug/L	100000	20	8260B	Total/NA
1,4-Dichlorobenzene	ND		ug/L	7500.0	20	8260B	Total/NA
1,2-Dichloroethane (EDC)	ND		ug/L	500.0	20	8260B	Total/NA
1,1-Dichloroethene	ND		ug/L	700.0	20	8260B	Total/NA
2-Butanone	ND		ug/L	200000	200	8260B	Total/NA
Tetrachloroethene (PCE)	ND		ug/L	700.0	20	8260B	Total/NA
Trichloroethene (TCE)	ND		ug/L	500.0	20	8260B	Total/NA
Vinyl chloride	ND		ug/L	200.0	20	8260B	Total/NA
Chloroform	ND		ug/L	6000	20	8260B	Total/NA
2-Methylphenol	ND		ug/L	200000	10	8270C	Total/NA
2,4-Dinitrotoluene	ND		ug/L	130.00	5.0	8270C	Total/NA
Hexachlorobenzene	ND		ug/L	130.00	20	8270C	Total/NA
Hexachlorobutadiene	ND		ug/L	500.0	20	8270C	Total/NA
Hexachloroethane	ND		ug/L	3000	20	8270C	Total/NA
Nitrobenzene	ND		ug/L	2000	5.0	8270C	Total/NA
Pentachlorophenol	ND		ug/L	100000	20	8270C	Total/NA
Pyridine	ND		ug/L	5000	20	8270C	Total/NA
2,4,5-Trichlorophenol	ND		ug/L	400000	10	8270C	Total/NA
2,4,6-Trichlorophenol	ND		ug/L	2000	10	8270C	Total/NA
Chlordane	ND	H	ug/L	30.00	1.0	8081B	Total/NA
Arsenic	0.0087	J	mg/L	5	0.010	6020A	Total Recoverable
Barium	0.047		mg/L	100	0.010	6020A	Total Recoverable
Cadmium	ND		mg/L	1	0.010	6020A	Total Recoverable
Chromium	ND		mg/L	5	0.010	6020A	Total Recoverable
Lead	ND		mg/L	5	0.010	6020A	Total Recoverable
Selenium	0.035		mg/L	1	0.010	6020A	Total Recoverable
Silver	ND		mg/L	5	0.010	6020A	Total Recoverable
Mercury	ND		mg/L	0.2	0.00020	7470A	Total/NA

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-11699/4

Matrix: Water

Analysis Batch: 11699

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		1.0	0.23	ug/L			09/05/24 16:54	1
Carbon tetrachloride	ND		1.0	0.18	ug/L			09/05/24 16:54	1
Chlorobenzene	ND		1.0	0.46	ug/L			09/05/24 16:54	1
1,4-Dichlorobenzene	ND		1.0	0.10	ug/L			09/05/24 16:54	1
1,2-Dichloroethane (EDC)	ND		1.0	0.30	ug/L			09/05/24 16:54	1
1,1-Dichloroethene	ND		1.0	0.20	ug/L			09/05/24 16:54	1
2-Butanone	ND		10	2.0	ug/L			09/05/24 16:54	1
Tetrachloroethene (PCE)	ND		1.0	0.18	ug/L			09/05/24 16:54	1
Trichloroethene (TCE)	ND		1.0	0.20	ug/L			09/05/24 16:54	1
Vinyl chloride	ND		1.0	0.32	ug/L			09/05/24 16:54	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	87		70 - 130		09/05/24 16:54	1
Toluene-d8 (Surr)	93		70 - 130		09/05/24 16:54	1
4-Bromofluorobenzene (Surr)	104		70 - 130		09/05/24 16:54	1
Dibromofluoromethane (Surr)	102		70 - 130		09/05/24 16:54	1

Lab Sample ID: LCS 885-11699/3

Matrix: Water

Analysis Batch: 11699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	20.1	23.3		ug/L		116	70 - 130
Chlorobenzene	20.1	20.8		ug/L		104	70 - 130
1,1-Dichloroethene	20.1	21.0		ug/L		104	70 - 130
Trichloroethene (TCE)	20.2	23.2		ug/L		115	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		70 - 130
Toluene-d8 (Surr)	93		70 - 130
4-Bromofluorobenzene (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	99		70 - 130

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-11150/1-A

Matrix: Water

Analysis Batch: 11507

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 11150

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Methylphenol	ND		10	4.7	ug/L		08/28/24 07:09	09/03/24 12:58	1
3 & 4 Methylphenol	ND		10	4.9	ug/L		08/28/24 07:09	09/03/24 12:58	1
2,4-Dinitrotoluene	ND		5.0	5.0	ug/L		08/28/24 07:09	09/03/24 12:58	1
Hexachlorobenzene	ND		20	4.6	ug/L		08/28/24 07:09	09/03/24 12:58	1
Hexachlorobutadiene	ND		20	11	ug/L		08/28/24 07:09	09/03/24 12:58	1
Hexachloroethane	ND		20	11	ug/L		08/28/24 07:09	09/03/24 12:58	1
Nitrobenzene	ND		5.0	3.6	ug/L		08/28/24 07:09	09/03/24 12:58	1
Pentachlorophenol	ND		20	15	ug/L		08/28/24 07:09	09/03/24 12:58	1

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 885-11150/1-A

Matrix: Water

Analysis Batch: 11507

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 11150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyridine	ND		20	2.6	ug/L		08/28/24 07:09	09/03/24 12:58	1
2,4,5-Trichlorophenol	ND		10	5.1	ug/L		08/28/24 07:09	09/03/24 12:58	1
2,4,6-Trichlorophenol	ND		10	4.3	ug/L		08/28/24 07:09	09/03/24 12:58	1
Cresols, Total	ND		10	4.9	ug/L		08/28/24 07:09	09/03/24 12:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)	49		15 - 130	08/28/24 07:09	09/03/24 12:58	1
2-Fluorophenol (Surr)	62		15 - 130	08/28/24 07:09	09/03/24 12:58	1
2,4,6-Tribromophenol (Surr)	65		15 - 130	08/28/24 07:09	09/03/24 12:58	1
Nitrobenzene-d5 (Surr)	82		29 - 130	08/28/24 07:09	09/03/24 12:58	1
2-Fluorobiphenyl (Surr)	69		20 - 130	08/28/24 07:09	09/03/24 12:58	1
p-Terphenyl-d14 (Surr)	79		41 - 130	08/28/24 07:09	09/03/24 12:58	1

Lab Sample ID: LCS 885-11150/2-A

Matrix: Water

Analysis Batch: 11507

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 11150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	100	53.4		ug/L		53	38 - 130
Pentachlorophenol	200	97.3		ug/L		49	15 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Phenol-d5 (Surr)	44		15 - 130
2-Fluorophenol (Surr)	55		15 - 130
2,4,6-Tribromophenol (Surr)	76		15 - 130
Nitrobenzene-d5 (Surr)	76		29 - 130
2-Fluorobiphenyl (Surr)	70		20 - 130
p-Terphenyl-d14 (Surr)	80		41 - 130

Lab Sample ID: LCSD 885-11150/3-A

Matrix: Water

Analysis Batch: 11507

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 11150

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-Dinitrotoluene	100	52.1		ug/L		52	38 - 130	2	39
Pentachlorophenol	200	99.0		ug/L		49	15 - 130	2	55

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Phenol-d5 (Surr)	42		15 - 130
2-Fluorophenol (Surr)	54		15 - 130
2,4,6-Tribromophenol (Surr)	71		15 - 130
Nitrobenzene-d5 (Surr)	71		29 - 130
2-Fluorobiphenyl (Surr)	65		20 - 130
p-Terphenyl-d14 (Surr)	76		41 - 130

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 885-11463/1-A

Matrix: Water

Analysis Batch: 11711

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 11463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane	ND		1.0	0.50	ug/L		09/03/24 07:00	09/06/24 08:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	69		53 - 130	09/03/24 07:00	09/06/24 08:48	1
Tetrachloro-m-xylene	61		18 - 130	09/03/24 07:00	09/06/24 08:48	1

Lab Sample ID: LCS 885-11463/2-A

Matrix: Water

Analysis Batch: 11711

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 11463

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	72		53 - 130
Tetrachloro-m-xylene	60		18 - 130

Lab Sample ID: LCSD 885-11463/3-A

Matrix: Water

Analysis Batch: 11711

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 11463

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	77		53 - 130
Tetrachloro-m-xylene	68		18 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-11057/4

Matrix: Water

Analysis Batch: 11057

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.10	0.050	mg/L			08/26/24 12:53	1
Chloride	ND		0.50	0.25	mg/L			08/26/24 12:53	1
Sulfate	ND		0.50	0.25	mg/L			08/26/24 12:53	1
Fluoride	ND		0.10	0.046	mg/L			08/26/24 12:53	1

Lab Sample ID: LCS 885-11057/5

Matrix: Water

Analysis Batch: 11057

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	2.50	2.52		mg/L		101	90 - 110
Chloride	5.00	5.05		mg/L		101	90 - 110
Sulfate	10.0	9.85		mg/L		99	90 - 110
Fluoride	0.500	0.549		mg/L		110	90 - 110

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 885-11057/3

Matrix: Water

Analysis Batch: 11057

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	0.100	0.105		mg/L		105	50 - 150
Chloride	0.500	0.555		mg/L		111	50 - 150
Sulfate	0.500	0.532		mg/L		106	50 - 150
Fluoride	0.100	0.104		mg/L		104	50 - 150

Lab Sample ID: 885-10556-1 MS

Matrix: Water

Analysis Batch: 11057

Client Sample ID: WDW-1,2,3 &4 Effluent  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	0.54		2.50	3.00		mg/L		98	80 - 120

Lab Sample ID: 885-10556-1 MSD

Matrix: Water

Analysis Batch: 11057

Client Sample ID: WDW-1,2,3 &4 Effluent  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	0.54		2.50	3.03		mg/L		100	80 - 120	1	20

Lab Sample ID: MB 885-11058/4

Matrix: Water

Analysis Batch: 11058

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.20	0.022	mg/L			08/26/24 12:53	1

Lab Sample ID: LCS 885-11058/5

Matrix: Water

Analysis Batch: 11058

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate	2.50	2.70		mg/L		108	90 - 110
Nitrite	1.00	0.965		mg/L		97	90 - 110

Lab Sample ID: MRL 885-11058/3

Matrix: Water

Analysis Batch: 11058

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate	0.100	0.106		mg/L		106	50 - 150
Nitrite	0.0999	0.104		mg/L		104	50 - 150

Lab Sample ID: 885-10556-1 MS

Matrix: Water

Analysis Batch: 11058

Client Sample ID: WDW-1,2,3 &4 Effluent  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate	1.3		2.50	4.16		mg/L		115	80 - 120

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 885-10556-1 MSD

Matrix: Water

Analysis Batch: 11058

Client Sample ID: WDW-1,2,3 &amp; 4 Effluent

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate	1.3		2.50	4.19		mg/L		116	80 - 120	1	20

Lab Sample ID: MB 885-11764/4

Matrix: Water

Analysis Batch: 11764

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.10	0.050	mg/L			09/05/24 11:17	1
Chloride	ND		0.50	0.25	mg/L			09/05/24 11:17	1
Sulfate	ND		0.50	0.25	mg/L			09/05/24 11:17	1
Fluoride	ND		0.10	0.046	mg/L			09/05/24 11:17	1

Lab Sample ID: LCS 885-11764/10

Matrix: Water

Analysis Batch: 11764

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	2.50	2.31		mg/L		92	90 - 110
Chloride	5.00	4.64		mg/L		93	90 - 110
Sulfate	10.0	9.07		mg/L		91	90 - 110
Fluoride	0.500	0.495		mg/L		99	90 - 110

Lab Sample ID: MRL 885-11764/3

Matrix: Water

Analysis Batch: 11764

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	0.100	0.0944	J	mg/L		94	50 - 150
Chloride	0.500	0.527		mg/L		105	50 - 150
Sulfate	0.500	0.515		mg/L		103	50 - 150
Fluoride	0.100	0.112		mg/L		112	50 - 150

## Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 885-12247/82

Matrix: Water

Analysis Batch: 12247

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1.0	0.065	mg/L			09/13/24 13:51	1
Magnesium	ND		1.0	0.024	mg/L			09/13/24 13:51	1

Lab Sample ID: LCS 885-12247/84

Matrix: Water

Analysis Batch: 12247

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	50.0	51.4		mg/L		103	85 - 115
Magnesium	50.0	50.5		mg/L		101	85 - 115

Eurofins Albuquerque

## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 885-12247/85

Matrix: Water

Analysis Batch: 12247

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	50.0	51.6		mg/L		103	85 - 115	0	20
Magnesium	50.0	50.3		mg/L		101	85 - 115	0	20

Lab Sample ID: LLCS 885-12247/86

Matrix: Water

Analysis Batch: 12247

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	0.500	0.569	J	mg/L		114	50 - 150		
Magnesium	0.500	0.608	J	mg/L		122	50 - 150		

Lab Sample ID: MRL 885-12247/24

Matrix: Water

Analysis Batch: 12247

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	0.500	0.549	J	mg/L		110	50 - 150		
Magnesium	0.500	0.605	J	mg/L		121	50 - 150		
Potassium	0.500	0.336	J	mg/L		67	50 - 150		
Sodium	0.500	0.490	J	mg/L		98	50 - 150		

Lab Sample ID: MB 885-12311/13

Matrix: Water

Analysis Batch: 12311

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1.0	0.065	mg/L			09/16/24 10:23	1
Potassium	0.220	J	1.0	0.12	mg/L			09/16/24 10:23	1
Sodium	ND		1.0	0.23	mg/L			09/16/24 10:23	1

Lab Sample ID: LCS 885-12311/15

Matrix: Water

Analysis Batch: 12311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	50.0	52.9		mg/L		106	85 - 115		
Potassium	50.0	52.7		mg/L		105	85 - 115		
Sodium	50.0	52.3		mg/L		105	85 - 115		

Lab Sample ID: LCSD 885-12311/16

Matrix: Water

Analysis Batch: 12311

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	50.0	55.4		mg/L		111	85 - 115	5	20
Potassium	50.0	54.6		mg/L		109	85 - 115	3	20
Sodium	50.0	53.8		mg/L		108	85 - 115	3	20

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LLCS 885-12311/14

Matrix: Water

Analysis Batch: 12311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.500	0.546	J	mg/L		109	50 - 150
Potassium	0.500	0.666	J	mg/L		133	50 - 150
Sodium	0.500	0.342	J	mg/L		68	50 - 150

Lab Sample ID: MRL 885-12311/10

Matrix: Water

Analysis Batch: 12311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.500	0.528	J	mg/L		106	50 - 150
Potassium	0.500	0.715	J	mg/L		143	50 - 150
Sodium	0.500	0.263	J	mg/L		53	50 - 150

Lab Sample ID: MB 885-12326/12

Matrix: Water

Analysis Batch: 12326

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1.0	0.065	mg/L			09/16/24 14:11	1
Potassium	ND		1.0	0.12	mg/L			09/16/24 14:11	1
Sodium	ND		1.0	0.23	mg/L			09/16/24 14:11	1

Lab Sample ID: LCS 885-12326/14

Matrix: Water

Analysis Batch: 12326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	50.0	56.1		mg/L		112	85 - 115
Potassium	50.0	53.9		mg/L		108	85 - 115
Sodium	50.0	53.9		mg/L		108	85 - 115

Lab Sample ID: LCSD 885-12326/15

Matrix: Water

Analysis Batch: 12326

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	50.0	54.2		mg/L		108	85 - 115	3	20
Potassium	50.0	52.0		mg/L		104	85 - 115	4	20
Sodium	50.0	53.4		mg/L		107	85 - 115	1	20

Lab Sample ID: LLCS 885-12326/13

Matrix: Water

Analysis Batch: 12326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.500	0.547	J	mg/L		109	50 - 150
Potassium	0.500	0.340	J	mg/L		68	50 - 150
Sodium	0.500	0.415	J	mg/L		83	50 - 150

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MRL 885-12326/9

Matrix: Water

Analysis Batch: 12326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.500	0.493	J	mg/L		99	50 - 150
Potassium	0.500	0.394	J	mg/L		79	50 - 150
Sodium	0.500	0.393	J	mg/L		79	50 - 150

## Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MRL 885-11856/9

Matrix: Water

Analysis Batch: 11856

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00100	0.000999	J	mg/L		100	70 - 130
Barium	0.00100	0.00102		mg/L		102	70 - 130
Cadmium	0.00100	0.000858	J	mg/L		86	70 - 130
Chromium	0.00100	0.00107		mg/L		107	70 - 130
Lead	0.00100	0.00113		mg/L		113	70 - 130
Selenium	0.00100	0.00118		mg/L		118	70 - 130
Silver	0.00100	0.00125		mg/L		125	70 - 130

Lab Sample ID: MB 885-12341/14

Matrix: Water

Analysis Batch: 12341

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00050	mg/L			09/16/24 11:03	1
Barium	ND		0.0010	0.00050	mg/L			09/16/24 11:03	1
Cadmium	ND		0.0010	0.00050	mg/L			09/16/24 11:03	1
Chromium	ND		0.0010	0.00050	mg/L			09/16/24 11:03	1
Lead	ND		0.0010	0.00060	mg/L			09/16/24 11:03	1
Selenium	ND		0.0010	0.00080	mg/L			09/16/24 11:03	1
Silver	ND		0.0010	0.00050	mg/L			09/16/24 11:03	1

Lab Sample ID: LCS 885-12341/23

Matrix: Water

Analysis Batch: 12341

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0500	0.0507		mg/L		101	80 - 120
Barium	0.0500	0.0483		mg/L		97	80 - 120
Cadmium	0.0500	0.0497		mg/L		99	80 - 120
Chromium	0.0500	0.0502		mg/L		100	80 - 120
Lead	0.0500	0.0519		mg/L		104	80 - 120
Selenium	0.0500	0.0498		mg/L		100	80 - 120
Silver	0.0250	0.0251		mg/L		101	80 - 120

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 885-12341/18

Matrix: Water

Analysis Batch: 12341

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0500	0.0515		mg/L		103	80 - 120	2	20
Barium	0.0500	0.0501		mg/L		100	80 - 120	4	20
Cadmium	0.0500	0.0489		mg/L		98	80 - 120	2	20
Chromium	0.0500	0.0517		mg/L		103	80 - 120	3	20
Lead	0.0500	0.0507		mg/L		101	80 - 120	2	20
Selenium	0.0500	0.0516		mg/L		103	80 - 120	4	20
Silver	0.0250	0.0250		mg/L		100	80 - 120	1	20

Lab Sample ID: MRL 885-12341/9

Matrix: Water

Analysis Batch: 12341

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00100	0.00109		mg/L		109	70 - 130
Barium	0.00100	0.00100		mg/L		100	70 - 130
Cadmium	0.00100	0.00101		mg/L		101	70 - 130
Chromium	0.00100	0.00110		mg/L		110	70 - 130
Lead	0.00100	0.00102		mg/L		102	70 - 130
Selenium	0.00100	0.00111		mg/L		111	70 - 130
Silver	0.00100	0.00120		mg/L		120	70 - 130

Lab Sample ID: MB 885-11103/1-A

Matrix: Water

Analysis Batch: 11683

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 11103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.0025	mg/L		08/27/24 11:33	09/04/24 18:10	5
Barium	ND		0.0050	0.0025	mg/L		08/27/24 11:33	09/04/24 18:10	5
Cadmium	ND		0.0050	0.0025	mg/L		08/27/24 11:33	09/04/24 18:10	5
Chromium	ND		0.0050	0.0025	mg/L		08/27/24 11:33	09/04/24 18:10	5
Lead	ND		0.0050	0.0030	mg/L		08/27/24 11:33	09/04/24 18:10	5
Selenium	ND		0.0050	0.0040	mg/L		08/27/24 11:33	09/04/24 18:10	5
Silver	ND		0.0050	0.0025	mg/L		08/27/24 11:33	09/04/24 18:10	5

Lab Sample ID: LCS 885-11103/3-A

Matrix: Water

Analysis Batch: 11683

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 11103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0500	0.0514		mg/L		103	80 - 120
Barium	0.0500	0.0572		mg/L		114	80 - 120
Cadmium	0.0500	0.0516		mg/L		103	80 - 120
Chromium	0.0500	0.0574		mg/L		115	80 - 120
Lead	0.0500	0.0457		mg/L		91	80 - 120
Selenium	0.0500	0.0528		mg/L		106	80 - 120
Silver	0.0250	0.0270		mg/L		108	80 - 120

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LLCS 885-11103/2-A

Matrix: Water

Analysis Batch: 11282

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 11103

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00100	ND		mg/L		80	
Barium	0.00100	ND		mg/L		90	
Cadmium	0.00100	ND		mg/L		9	
Chromium	0.00100	ND		mg/L		97	
Lead	0.00100	ND		mg/L		98	
Silver	0.00100	ND		mg/L		85	

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MRL 885-11406/9-A

Matrix: Water

Analysis Batch: 11467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 11406

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.000150	0.000153	J	mg/L		102	50 - 150

Lab Sample ID: MB 885-11408/1-A

Matrix: Water

Analysis Batch: 11467

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 11408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		08/30/24 11:00	08/31/24 13:45	1

Lab Sample ID: LCS 885-11408/3-A

Matrix: Water

Analysis Batch: 11467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 11408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00490		mg/L		98	85 - 115

Lab Sample ID: LLCS 885-11408/2-A

Matrix: Water

Analysis Batch: 11467

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 11408

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.000150	0.000147	J	mg/L		98	50 - 150

## Method: 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 885-11258/1

Matrix: Water

Analysis Batch: 11258

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		50	25	mg/L			08/29/24 08:03	1

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 885-11258/2

Matrix: Water

Analysis Batch: 11258

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	980		mg/L		98	80 - 120

## Method: 9040C - pH

Lab Sample ID: 885-10556-1 DU

Matrix: Water

Analysis Batch: 185104

Client Sample ID: WDW-1,2,3 &amp; 4 Effluent

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	HF	7.6		SU		0.1	20
Temperature	11.9	HF	11.9		Degrees C		0	20
Corrosivity	7.6	HF	7.6		SU		0.1	

## Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 860-184613/24

Matrix: Water

Analysis Batch: 184613

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.0050	0.0020	mg/L			08/29/24 16:23	1

Lab Sample ID: LCS 860-184613/26

Matrix: Water

Analysis Batch: 184613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.100	0.101		mg/L		101	90 - 110

Lab Sample ID: LCSD 860-184613/27

Matrix: Water

Analysis Batch: 184613

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	0.100	0.0971		mg/L		97	90 - 110	4	20

Lab Sample ID: LLCS 860-184613/25

Matrix: Water

Analysis Batch: 184613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.00500	0.00315	J	mg/L		63	50 - 150

## Method: SM 2320B - Alkalinity

Lab Sample ID: MB 885-11634/2

Matrix: Water

Analysis Batch: 11634

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	ND		20	20	mg/L			09/04/24 11:53	1

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 885-11634/2

Matrix: Water

Analysis Batch: 11634

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO <sub>3</sub>	ND		20	20	mg/L			09/04/24 11:53	1
Carbonate Alkalinity as CaCO <sub>3</sub>	ND		2.0	2.0	mg/L			09/04/24 11:53	1

Lab Sample ID: LCS 885-11634/3

Matrix: Water

Analysis Batch: 11634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO <sub>3</sub>	84.8	78.4		mg/L		92	90 - 110

Lab Sample ID: MRL 885-11634/1

Matrix: Water

Analysis Batch: 11634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO <sub>3</sub>	21.2	23.0		mg/L		108	50 - 150

## Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: LCS 885-11781/4

Matrix: Water

Analysis Batch: 11781

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	99.2	102		umhos/cm		103	85 - 115

Lab Sample ID: MRL 885-11781/3

Matrix: Water

Analysis Batch: 11781

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	9.92	ND		umhos/cm		96	50 - 150

## Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 885-12583/1

Matrix: Water

Analysis Batch: 12583

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	4.0	mg/L			09/19/24 15:07	1

Lab Sample ID: LCSSRM 885-12583/2

Matrix: Water

Analysis Batch: 12583

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.0		mg/L		98.0	77.1 - 110.0

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## QC Sample Results

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Method: SM 2710F - Specific Gravity

Lab Sample ID: MB 885-13022/1

Matrix: Water

Analysis Batch: 13022

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity	0.999				NONE			09/25/24 14:27	1

Lab Sample ID: 885-10556-1 DU

Matrix: Water

Analysis Batch: 13022

Client Sample ID: WDW-1,2,3 &amp; 4 Effluent

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	RPD	RPD Limit
Specific Gravity	1.0	H	1.00		NONE			0.2	20

## Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 860-183978/3

Matrix: Water

Analysis Batch: 183978

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10	0.040	mg/L			08/27/24 18:25	1

Lab Sample ID: LCS 860-183978/4

Matrix: Water

Analysis Batch: 183978

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD
Sulfide	1.00	1.00		mg/L		100	90 - 110	

Lab Sample ID: LCSD 860-183978/5

Matrix: Water

Analysis Batch: 183978

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	1.00	0.997		mg/L		100	90 - 110	0	20

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## QC Association Summary

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## GC/MS VOA

## Analysis Batch: 11699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	8260B	
MB 885-11699/4	Method Blank	Total/NA	Water	8260B	
LCS 885-11699/3	Lab Control Sample	Total/NA	Water	8260B	

## GC/MS Semi VOA

## Prep Batch: 11150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	3510C	
MB 885-11150/1-A	Method Blank	Total/NA	Water	3510C	
LCS 885-11150/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 885-11150/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

## Analysis Batch: 11507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 885-11150/1-A	Method Blank	Total/NA	Water	8270C	11150
LCS 885-11150/2-A	Lab Control Sample	Total/NA	Water	8270C	11150
LCSD 885-11150/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	11150

## Analysis Batch: 11713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	8270C	11150

## GC Semi VOA

## Prep Batch: 11463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	3510C	
MB 885-11463/1-A	Method Blank	Total/NA	Water	3510C	
LCS 885-11463/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 885-11463/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

## Analysis Batch: 11711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	8081B	11463
MB 885-11463/1-A	Method Blank	Total/NA	Water	8081B	11463
LCS 885-11463/2-A	Lab Control Sample	Total/NA	Water	8081B	11463
LCSD 885-11463/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	11463

## HPLC/IC

## Analysis Batch: 11057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	
MB 885-11057/4	Method Blank	Total/NA	Water	300.0	
LCS 885-11057/5	Lab Control Sample	Total/NA	Water	300.0	
MRL 885-11057/3	Lab Control Sample	Total/NA	Water	300.0	
885-10556-1 MS	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	
885-10556-1 MSD	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	

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## QC Association Summary

Client: HF Sinclair Asphalt Navajo Refining LLC  
 Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## HPLC/IC

## Analysis Batch: 11058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	
MB 885-11058/4	Method Blank	Total/NA	Water	300.0	
LCS 885-11058/5	Lab Control Sample	Total/NA	Water	300.0	
MRL 885-11058/3	Lab Control Sample	Total/NA	Water	300.0	
885-10556-1 MS	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	
885-10556-1 MSD	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	

## Analysis Batch: 11764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	300.0	
MB 885-11764/4	Method Blank	Total/NA	Water	300.0	
LCS 885-11764/10	Lab Control Sample	Total/NA	Water	300.0	
MRL 885-11764/3	Lab Control Sample	Total/NA	Water	300.0	

## Metals

## Prep Batch: 11103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total Recoverable	Water	3005A	
MB 885-11103/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 885-11103/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
LLCS 885-11103/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

## Analysis Batch: 11282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LLCS 885-11103/2-A	Lab Control Sample	Total Recoverable	Water	6020A	11103

## Prep Batch: 11406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 885-11406/9-A	Lab Control Sample	Total/NA	Water	245.1	

## Prep Batch: 11408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	7470A	
MB 885-11408/1-A	Method Blank	Total/NA	Water	7470A	
LCS 885-11408/3-A	Lab Control Sample	Total/NA	Water	7470A	
LLCS 885-11408/2-A	Lab Control Sample	Total/NA	Water	7470A	

## Analysis Batch: 11467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	7470A	11408
MB 885-11408/1-A	Method Blank	Total/NA	Water	7470A	11408
LCS 885-11408/3-A	Lab Control Sample	Total/NA	Water	7470A	11408
LLCS 885-11408/2-A	Lab Control Sample	Total/NA	Water	7470A	11408
MRL 885-11406/9-A	Lab Control Sample	Total/NA	Water	7470A	11406

## Analysis Batch: 11683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 885-11103/1-A	Method Blank	Total Recoverable	Water	6020A	11103
LCS 885-11103/3-A	Lab Control Sample	Total Recoverable	Water	6020A	11103

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## QC Association Summary

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## Metals

## Analysis Batch: 11856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total Recoverable	Water	6020A	11103
MRL 885-11856/9	Lab Control Sample	Total/NA	Water	6020A	

## Analysis Batch: 12247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Dissolved	Water	200.7 Rev 4.4	
MB 885-12247/82	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 885-12247/84	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
LCSD 885-12247/85	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	
LLCS 885-12247/86	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
MRL 885-12247/24	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	

## Analysis Batch: 12311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Dissolved	Water	200.7 Rev 4.4	
MB 885-12311/13	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 885-12311/15	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
LCSD 885-12311/16	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	
LLCS 885-12311/14	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
MRL 885-12311/10	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	

## Analysis Batch: 12326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Dissolved	Water	200.7 Rev 4.4	
MB 885-12326/12	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 885-12326/14	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
LCSD 885-12326/15	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	
LLCS 885-12326/13	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
MRL 885-12326/9	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	

## Analysis Batch: 12341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total Recoverable	Water	6020A	11103
MB 885-12341/14	Method Blank	Total/NA	Water	6020A	
LCS 885-12341/23	Lab Control Sample	Total/NA	Water	6020A	
LCSD 885-12341/18	Lab Control Sample Dup	Total/NA	Water	6020A	
MRL 885-12341/9	Lab Control Sample	Total/NA	Water	6020A	

## General Chemistry

## Analysis Batch: 11258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	2540C	
MB 885-11258/1	Method Blank	Total/NA	Water	2540C	
LCS 885-11258/2	Lab Control Sample	Total/NA	Water	2540C	

## Analysis Batch: 11634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	SM 2320B	
MB 885-11634/2	Method Blank	Total/NA	Water	SM 2320B	
LCS 885-11634/3	Lab Control Sample	Total/NA	Water	SM 2320B	

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## QC Association Summary

Client: HF Sinclair Asphalt Navajo Refining LLC  
Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

## General Chemistry (Continued)

## Analysis Batch: 11634 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 885-11634/1	Lab Control Sample	Total/NA	Water	SM 2320B	

## Analysis Batch: 11781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	SM 2510B	
LCS 885-11781/4	Lab Control Sample	Total/NA	Water	SM 2510B	
MRL 885-11781/3	Lab Control Sample	Total/NA	Water	SM 2510B	

## Analysis Batch: 12583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	SM 2540D	
MB 885-12583/1	Method Blank	Total/NA	Water	SM 2540D	
LCSSRM 885-12583/2	Lab Control Sample	Total/NA	Water	SM 2540D	

## Analysis Batch: 13022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	SM 2710F	
MB 885-13022/1	Method Blank	Total/NA	Water	SM 2710F	
885-10556-1 DU	WDW-1,2,3 &4 Effluent	Total/NA	Water	SM 2710F	

## Analysis Batch: 183849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	1010	
LCS 860-183849/1	Lab Control Sample	Total/NA	Water	1010	

## Analysis Batch: 183978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	SM 4500 S2 D	
MB 860-183978/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 860-183978/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 860-183978/5	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	

## Analysis Batch: 184613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	Kelada 01	
MB 860-184613/24	Method Blank	Total/NA	Water	Kelada 01	
LCS 860-184613/26	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 860-184613/27	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
LLCS 860-184613/25	Lab Control Sample	Total/NA	Water	Kelada 01	

## Analysis Batch: 185104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10556-1	WDW-1,2,3 &4 Effluent	Total/NA	Water	9040C	
885-10556-1 DU	WDW-1,2,3 &4 Effluent	Total/NA	Water	9040C	

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## Lab Chronicle

Client: HF Sinclair Asphalt Navajo Refining LLC  
 Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

Client Sample ID: WDW-1,2,3 &amp;4 Effluent

Lab Sample ID: 885-10556-1

Date Collected: 08/22/24 13:05

Matrix: Water

Date Received: 08/24/24 07:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		200	11699	CM	EET ALB	09/05/24 20:09
Total/NA	Prep	3510C			11150	JM	EET ALB	08/28/24 07:09
Total/NA	Analysis	8270C		1	11713	MB	EET ALB	09/06/24 17:26
Total/NA	Prep	3510C			11463	JM	EET ALB	09/03/24 07:00
Total/NA	Analysis	8081B		1	11711	MB	EET ALB	09/06/24 10:05
Total/NA	Analysis	300.0		100	11764	JT	EET ALB	09/06/24 00:11
Total/NA	Analysis	300.0		1	11057	JT	EET ALB	08/26/24 18:11
Total/NA	Analysis	300.0		20	11057	JT	EET ALB	08/26/24 18:56
Total/NA	Analysis	300.0		5	11058	JT	EET ALB	08/26/24 21:13
Dissolved	Analysis	200.7 Rev 4.4		100	12247	VP	EET ALB	09/13/24 14:51
Dissolved	Analysis	200.7 Rev 4.4		100	12311	VP	EET ALB	09/16/24 11:26
Dissolved	Analysis	200.7 Rev 4.4		100	12326	VP	EET ALB	09/16/24 14:21
Total Recoverable	Prep	3005A			11103	JE	EET ALB	08/27/24 11:40
Total Recoverable	Analysis	6020A		10	11856	BV	EET ALB	09/06/24 16:52
Total Recoverable	Prep	3005A			11103	JE	EET ALB	08/27/24 11:40
Total Recoverable	Analysis	6020A		10	12341	BV	EET ALB	09/16/24 13:15
Total/NA	Prep	7470A			11408	JE	EET ALB	08/30/24 11:01
Total/NA	Analysis	7470A		1	11467	TM	EET ALB	08/31/24 16:17
Total/NA	Analysis	1010		1	183849	SA	EET HOU	08/27/24 12:23
Total/NA	Analysis	2540C		1	11258	ES	EET ALB	08/29/24 08:03
Total/NA	Analysis	9040C		1	185104	MR	EET HOU	09/03/24 18:01
Total/NA	Analysis	Kelada 01		1	184613	BW	EET HOU	08/29/24 16:46
Total/NA	Analysis	SM 2320B		1	11634	MA	EET ALB	09/04/24 16:09
Total/NA	Analysis	SM 2510B		1	11781	DL	EET ALB	09/06/24 12:57
Total/NA	Analysis	SM 2540D		1	12583	KS	EET ALB	09/19/24 15:07
Total/NA	Analysis	SM 2710F		1	13022	RC	EET ALB	09/25/24 14:27
Total/NA	Analysis	SM 4500 S2 D		1	183978	SCI	EET HOU	08/27/24 18:26

## Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Eurofins Albuquerque

**Accreditation/Certification Summary**

Client: HF Sinclair Asphalt Navajo Refining LLC  
 Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

**Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.7 Rev 4.4		Water	Calcium
200.7 Rev 4.4		Water	Magnesium
200.7 Rev 4.4		Water	Potassium
200.7 Rev 4.4		Water	Sodium
2540C		Water	Total Dissolved Solids
300.0		Water	Bromide
300.0		Water	Chloride
300.0		Water	Fluoride
300.0		Water	Nitrate Nitrite as N
300.0		Water	Sulfate
6020A	3005A	Water	Arsenic
6020A	3005A	Water	Barium
6020A	3005A	Water	Cadmium
6020A	3005A	Water	Chromium
6020A	3005A	Water	Lead
6020A	3005A	Water	Selenium
6020A	3005A	Water	Silver
7470A	7470A	Water	Mercury
8081B	3510C	Water	Chlordane
8260B		Water	1,1-Dichloroethene
8260B		Water	1,2-Dichloroethane (EDC)
8260B		Water	1,4-Dichlorobenzene
8260B		Water	2-Butanone
8260B		Water	Benzene
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chloroform
8260B		Water	Tetrachloroethene (PCE)
8260B		Water	Trichloroethene (TCE)
8260B		Water	Vinyl chloride
8270C	3510C	Water	2,4,5-Trichlorophenol
8270C	3510C	Water	2,4,6-Trichlorophenol
8270C	3510C	Water	2,4-Dinitrotoluene
8270C	3510C	Water	2-Methylphenol
8270C	3510C	Water	3 & 4 Methylphenol
8270C	3510C	Water	Cresols, Total
8270C	3510C	Water	Hexachlorobenzene
8270C	3510C	Water	Hexachlorobutadiene
8270C	3510C	Water	Hexachloroethane
8270C	3510C	Water	Nitrobenzene
8270C	3510C	Water	Pentachlorophenol
8270C	3510C	Water	Pyridine
SM 2320B		Water	Bicarbonate Alkalinity as CaCO <sub>3</sub>
SM 2320B		Water	Carbonate Alkalinity as CaCO <sub>3</sub>
SM 2320B		Water	Total Alkalinity as CaCO <sub>3</sub>

Eurofins Albuquerque

**Accreditation/Certification Summary**

Client: HF Sinclair Asphalt Navajo Refining LLC  
 Project/Site: Quarterly WDW-1, 2, 3, & 4 Inj Well

Job ID: 885-10556-1

**Laboratory: Eurofins Albuquerque (Continued)**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
SM 2510B		Water	Specific Conductance
SM 2540D		Water	Total Suspended Solids
SM 2710F		Water	Specific Gravity
Oregon	NELAP	NM100001	02-26-25
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8270C	3510C	Water	Cresols, Total
SM 2320B		Water	Bicarbonate Alkalinity as CaCO <sub>3</sub>
SM 2320B		Water	Carbonate Alkalinity as CaCO <sub>3</sub>
SM 2710F		Water	Specific Gravity

**Laboratory: Eurofins Houston**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-00759	08-03-25
Florida	NELAP	E871002	06-30-25
Louisiana (All)	NELAP	03054	06-30-25
Oklahoma	NELAP	1306	08-31-25
Texas	NELAP	T104704215	06-30-25
Texas	TCEQ Water Supply	T104704215	12-28-25
USDA	US Federal Programs	525-23-79-79507	03-20-26

Eurofins Albuquerque





## Environment Testing

10/16/2024 (Rev. 1)



**Login Sample Receipt Checklist**

Client: HF Sinclair Asphalt Navajo Refining LLC

Job Number: 885-10556-1

**Login Number: 10556****List Source: Eurofins Albuquerque****List Number: 1****Creator: Casarrubias, Tracy**

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

## Login Sample Receipt Checklist

Client: HF Sinclair Asphalt Navajo Refining LLC

Job Number: 885-10556-1

Login Number: 10556

List Number: 2

Creator: Grandits, Corey

List Source: Eurofins Houston

List Creation: 08/27/24 11:12 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

COMMENTS

Action 399772

COMMENTS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 399772
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	UICI-8-1 WDW-1 FY2024 Q4 Quarterly Report (Note: All Quarterly Reports are filed in the WDW-1 Admin. Record)	3/27/2025

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1220 S. St Francis Dr.  
Santa Fe, NM 87505

CONDITIONS

Action 399772

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 399772
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
cchavez	Conditions of Approval are: QA/QC Field Sampling: 1. Chain of Custody Seals must be placed on coolers containing lab samples after sample collection at site before delivery to lab; 2. Cooler Temperatures must not exceed 4 degrees Celsius up receipt by the Lab; 3. Proper sample containers and they must match Chain of Custody Forms; 4. Plenty of sample shall be present for lab analysis. 5. Environmental sampler(s) must sign Chain of Custody Forms and address lab comments received in lab reports so they do not reoccur. and 6. Some field parameters may be obtained in the field, i.e., pH, Specific Conductance, ORP, etc. to eliminate holding time comments received from lab. QA/QC Laboratory: 1. Confirm Eurofins Lab is NELAC compliant in Albuquerque Lab Location (If not, change to NELAC compliant lab; 2. Care not to "over dilute" lab samples prior to analysis (i.e., 8270C Sample); 3. Dilution Factor must not be excessive (i.e., 8260 sample DF of 200 seems excessive); and 4. Abide by HTs.	3/27/2025