

25 November 2025

Mr. Shane DeGross
Manager Environmental Remediation
BNSF Railway Company
605 Puyallup Avenue
Tacoma, Washington 98421

Subject: August 2025 Groundwater Compliance Monitoring Report
BNSF D Street Oil Pipeline Site
Tacoma, Washington
KJ Project 2596139*00

Dear Mr. DeGross:

This report presents the results of the August 2025 groundwater compliance monitoring conducted at the BNSF Railway Company (BNSF) D Street Oil Pipeline Site in Tacoma, Washington (Site). The Site is located along the former alignment of an oil pipeline that was used to transport bunker oil from bulk storage tanks located north of the intersection of East 15th Street and D Street, to what is now the Tacoma Rail Yard, located south and east of the intersection of East 21st Street and East D Street (Figure 1).

Background and Purpose

This groundwater sampling event was conducted at the request of the Washington State Department of Ecology (Ecology) as part of a Periodic Review to be conducted in 2025 per Washington Administrative Code (WAC) 173-340-420. The groundwater compliance program is intended to monitor chemicals of concern (COCs) and natural attenuation (NA) parameters in groundwater following completion of the final remedial action in December 2009 (GeoEngineers 2010). The monitoring activities and this report are required by a Consent Decree (CD), dated 5 August 2008, between BNSF and Ecology (Pierce County Superior Court Action No. 08 2 11105 4).

The concentrations of COCs are evaluated at the Conditional Point of Compliance (CPOC) relative to Site cleanup levels (CULs) identified in the *Final Remedial Investigation (RI)/Feasibility Study (FS) Report* dated 4 April 2007 (GeoEngineers 2007a) and the *Draft Final Cleanup Action Plan (CAP)* dated 14 November 2007 (GeoEngineers 2007b). Monitoring wells MW-2 through MW-5, MW-8, MW-9, and MW-11, collectively known as 'the D Street wells', serve to define the CPOC identified in the CAP (Figure 2).

The RI/FS and CAP identified the COCs for groundwater at the Site as petroleum hydrocarbons [quantified as Bunker Range Petroleum Hydrocarbons (BRPH)], carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and naphthalene. Model Toxics Control Act (MTCA) Method A CULs for groundwater were selected for use at this Site, as defined in the CAP, and include:

- Petroleum hydrocarbons (quantified as BRPH): 0.5 milligrams per liter (mg/L)

- Total cPAHs (as determined using toxicity equivalency methodology as required in WAC 173-340-708(8)): 0.1 micrograms per liter ($\mu\text{g/L}$)
- Naphthalene: 160 $\mu\text{g/L}$.

Ecology Correspondence

In June 2011, the previous Ecology Site Manager, Mr. Marv Coleman, approved a request to discontinue annual groundwater monitoring at the Site. As part of that approval, Ecology noted that because the Site has institutional controls applied to it, a 5-year review would be required (Ecology 2011). According to Ecology, prior to the 5-year review, an additional round of groundwater sampling was required, along with an inspection of physical barriers put in place during remedial excavations. The planned installation locations of these physical barriers were provided in the *Engineering Design Report* (EDR) (GeoEngineers 2008) and were to be located surrounding the western ends of the Home Electric Building and Supervalu Building, along East D Street between East 18th Street and East 19th Street (GeoEngineers 2008).

Ecology indicated in a 2015 email that they would consider approving abandonment of the D Street wells after the 5-year review was completed (Ecology 2015a). This was consistent with previous correspondence with GeoEngineers staff, where Mr. Coleman indicated he would consider terminating the CD after the 5-year review (GeoEngineers 2011).

In a follow-up letter to Mr. Bruce Sheppard (BNSF), dated 29 April 2015 (Ecology 2015b), Ecology indicated no further remedial action was necessary at the Site by some of the potentially liable parties (PLPs), including the Washington State Department of Transportation, the City of Tacoma, John Backus Home Electric, and 1815 D Street LLC. This NFA did not apply to BNSF, and the letter noted *“further remedial action is still necessary under MTCA and the consent decree to control and monitor remaining contamination and periodically review conditions at the site”* (Ecology 2015b). The letter noted that Ecology considers cleanup required at the Site under the CD to be complete, but post-cleanup actions are still required, including sampling of the D Street wells as part of the 5-year review, and inspecting physical barriers put in place during remedial excavations.

Kennedy/Jenks Consultants, Inc. (Kennedy Jenks) conducted an additional periodic review in 2016 that included well redevelopment and groundwater monitoring. Diesel and heavy oil range hydrocarbons, PAHs, and cPAHs were not detected above laboratory reporting limits (RLs) during the 2016 groundwater monitoring event, and the results indicated that the Site continued to comply with the MTCA CULs established in the CD. Both primary and secondary NA parameters recorded during the 2016 groundwater monitoring event were similar to results from the 2011 groundwater monitoring event and continued to indicate conditions were favorable for NA of the residual hydrocarbons that may remain at the Site. The Site was recommended for closure, including discontinuing the 2008 groundwater Compliance Monitoring Plan (CMP), finalizing the 5-year review, permanently abandoning the D Street monitoring wells, and terminating the CD. Ecology responded with an opinion that potential impacts attributable to the former pipeline may remain under the building at 1815 Dock Street, which required maintaining the existing environmental covenant, an inability to close the Site at that time, and continuation of the groundwater monitoring program on a 5-year period.

On 2 February 2018, BNSF contacted the previous Ecology site manager, Mr. Marv Coleman, via email to request abandonment of the Site monitoring wells and satisfaction of the CD. BNSF's request was denied by Ecology in an email response dated 21 May 2018 (Ecology 2018). Ecology stated that because soil impacts related to the former pipeline and heating oil USTs remained beneath the existing structures at 1815 Dock Street, the existing EC and periodic reviews were still required. Ecology indicated that they had a conversation with the new property owner at 1815 Dock Street, and that it was Ecology's understanding that the property owner had "no current plans to remove or alter the existing structures," which Ecology acknowledged effectively capped impacted soil beneath the property. Despite this acknowledgement, they expressed concern that if the CD was terminated, future alterations to those structures would require the property owner to "remove contamination to the extent practicable, based on the modifications being made at that time." In the 21 May 2018 email, Ecology acknowledged the history of non-detect results in groundwater samples collected at the CPOCs during routine groundwater monitoring and restated that annual groundwater monitoring would not be required at the site as previously agreed because "soil contamination was removed to the point that it met MTCA Standards for the COCs at the CPOCs." Despite this, Ecology maintained the opinion that "sampling may be requested in the future at the time of Five Year Reviews, to confirm (as is provided for in MTCA) that the existing remedy remains effective."

On 27 May 2025, the current Ecology site manager, Ms. Danielle Gibson, conducted a periodic review of the Site, which resulted in Ecology requesting another round of groundwater monitoring in compliance with the 2008 Cleanup Action Plan and 2008 CMP to confirm that the existing remedy is still effective. The seven D Street monitoring wells (MW-2 through MW-5, MW-8, MW-9, and MW 11), shown on Figure 2, represent the CPOC for the Site as named in the CMP.

Field Methods

The D Street wells are in traffic lanes along East D Street, so accessing the wells requires a Right-of-Way (ROW) permit from the City of Tacoma. Prior to conducting well development and sampling activities, Kennedy Jenks obtained ROW Permit No. RUSE25-0206 and subcontracted with a licensed traffic control services provider.

The D Street monitoring wells had not been accessed or sampled since 2016; as such, they were redeveloped on 30 July 2025 prior to sampling. Redevelopment of the wells was carried out by a combination of surging and pumping each well to remove accumulated sediment and clean the well screen. Wells MW-2, MW-3, MW-4, MW-5, MW-8, MW-9, and MW-11 were purged using a 12-volt submersible well pump and dedicated polyethylene tubing. Wells were purged until each well was producing clear water after surging. Approximately three well volumes of water were purged from each well. Purge water was placed into 55-gallon drums, labeled, and temporarily stored at the nearby Tacoma Rail Yard for offsite disposal.

Groundwater samples were collected for laboratory analysis in general accordance with the 9 July 2008 CMP as presented in the EDR. The August 2025 groundwater compliance monitoring samples were collected on 15 August 2025, primarily during an outgoing tide, as measured by the National Oceanic and Atmospheric Administration's Commencement Bay Tidal Station 9446484 (Attachment A). During the field work, afternoon traffic congestion delayed moving the traffic protection, which led to the sample collected at MW-9 (collected at 16:05) occurring nine minutes after the transition from outgoing

to incoming tide (transition at 15:56). Although the CMP does not specify when groundwater samples will be collected regarding tidal stage, samples were collected primarily during an outgoing tide to limit the potential for tidally induced groundwater gradients to bias conditions observed at the CPOC.

The groundwater samples were collected following low-flow sampling guidelines to minimize the suspension of particulates in the samples. Groundwater samples were collected using a peristaltic pump with new, dedicated polyethylene tubing at each well. Groundwater samples were collected by pumping at flow rates of less than 0.5 liters per minute from the approximate mid-point of the screened interval in each well.

A YSI Pro DSS water quality meter was used with an inline flow-through cell to measure electrical conductivity, dissolved oxygen (DO), pH, turbidity, oxidation-reduction potential (ORP) and temperature. The YSI Pro DSS water quality meter was calibrated to known standards following the manufacturer's recommended procedures prior to conducting the field work. As noted in the CMP, ambient groundwater conditions were assumed to have been reached once three consecutive measurements of temperature, pH, turbidity, and conductivity were within 10 percent of each other.

Once the water quality parameters had stabilized, the flow-through-cell was disconnected, and the groundwater samples were collected into laboratory-provided containers. The samples were placed into a cooler with ice and shipped under chain-of-custody protocol to Pace Analytical Services of Mt. Juliet, Tennessee, a Washington State accredited environmental laboratory. The groundwater samples were submitted for analysis of:

- Diesel Range Petroleum Hydrocarbons by Method NWTPH-Dx with silica gel cleanup
- PAHs by U.S. Environmental Protection Agency (EPA) Method 8270D-SIM
- Manganese by EPA Method 200.8
- Nitrates by EPA Method 300
- Sulfates by EPA Method 300
- Total Alkalinity by EPA Method 310.1

NA parameter data were collected to monitor Site conditions as described in the CMP.

Purge water from well development and groundwater sampling was placed into labeled 55-gallon drums for future waste characterization and offsite disposal.

Analytical Results

Analytical results from the 15 August 2025 monitoring event are summarized in Table 1, and the laboratory analytical report is included as Attachment B. A data validation summary is included in Attachment C. A summary of COC detections from groundwater monitoring events from 2010 through 2025 is shown on Figure 3.

Petroleum Hydrocarbons

Diesel-range and residual-range petroleum hydrocarbons were not detected at concentrations above the laboratory RLs in any of the groundwater samples collected.

cPAHs

cPAHs were not detected at concentrations above the laboratory RLs in any of the groundwater samples collected.

Naphthalene

Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were not detected at concentrations above the laboratory RLs in any of the groundwater samples collected.

Natural Attenuation Parameters

Field-measured NA parameters (pH, DO, and ORP) collected in the field during the August 2025 groundwater compliance monitoring were variable across the Site and, similar to results observed during the August 2016 monitoring event (Kennedy Jenks 2016). The measured parameters continue to indicate conditions are favorable for NA of any residual hydrocarbons that may potentially remain at the Site.

Laboratory-measured NA parameters (manganese, total alkalinity, nitrate, and sulfate) are also variable and similar to those observed during the August 2016 event. Dissolved Manganese samples were field filtered using a 0.45-micron filter, then also additionally filtered by the laboratory with a 0.45-micron filter before analysis due to miscommunication. Dissolved Manganese results were similar to those observed during the last groundwater compliance monitoring event in 2016. These parameters also continue to indicate conditions are favorable for NA of any residual COCs that potentially remain at the Site.

Conclusion

Diesel and heavy oil range hydrocarbons, PAHs, and cPAHs were not reported above the laboratory RLs in any of the groundwater samples collected from the D Street wells during the August 2025 groundwater compliance monitoring event. The COC results of the August 2025 groundwater compliance monitoring are consistent with the results of the 2016 event, where COCs were not detected in the samples collected from the CPOC wells. The field- and laboratory-measured NA parameters were variable across the Site, but were consistent with the 2010, 2011, and 2016 groundwater compliance monitoring events and continued to indicate favorable conditions for NA. The August 2025 groundwater compliance monitoring results indicate that the Site complies with the MTCA CULs established in the CD. Continued sampling for NA parameters is no longer warranted since no COCs were detected.

The last time COCs were reported above laboratory RLs in groundwater samples collected from the CPOC wells was during the February 2011 groundwater compliance monitoring event, more than 14 years ago. The only COC detected during that event was naphthalene, which was reported in two wells

(0.0098 µg/L in MW-5; and 0.012 µg/L in MW-11; 0.0218 µg/L combined) but at a combined concentration five orders of magnitudes less than its respective MTCA CUL (160 µg/L).

Based on the historical compliance monitoring results, the conditions for site cleanup as described in both the CD and the CMP were achieved more than 14 years ago. Current results indicate that groundwater conditions are stable and consistently remain below CULs. As such, ceasing the groundwater compliance monitoring program, finalizing the 5-year review, and permanently decommissioning the D St. monitoring wells is recommended.

Sincerely,

KENNEDY/JENKS CONSULTANTS



Spenser O.E. Kuhn, LG, PG
Project Manager



Todd A. Miller, LHG, LG
Senior Hydrogeologist

cc: Danielle Gibson, Washington State Department of Ecology

Attachments:

- Table 1. Summary of Groundwater Compliance Monitoring Analytical Results
- Table 2. Summary of Groundwater Compliance Monitoring Natural Attenuation Parameters
- Figure 1. Vicinity Map
- Figure 2. Site Map
- Figure 3. Summary of COC Detections
- Attachment A. Summary of NOAA Tide Tables During Field Events
- Attachment B. Laboratory Analytical Report and Chain-of-Custody Documentation
- Attachment C. Data Quality Assessment Summary

References

- GeoEngineers. 2007a. Final Remedial Investigation/Feasibility Study Report, The BNSF Oil Pipeline Site, Tacoma, Washington. 4 April 2007.
- GeoEngineers. 2007b. Draft Final Cleanup Action Plan; The BNSF Oil Pipeline Site, Tacoma, Washington. 14 November 2007.
- GeoEngineers. 2008. Engineering Design Report, The BNSF Oil Pipeline, Tacoma, Washington. 9 July 2008.
- GeoEngineers. 2010. Final Remedial Action Report; The BNSF Oil Pipeline Site, Tacoma, Washington. 28 May.
- GeoEngineers. 2011. Email from Nick Rohrbach (GeoEngineers) to Matt Wells (Tupper Mack Wells PLLC) and Bruce Sheppard (BNSF) summarizing conversation with Marv Coleman (Ecology). 7 July 2011.

Kennedy Jenks. 2016. November 2016 Groundwater Compliance Monitoring Report; BNSF D Street Oil Pipeline Site. 13 February 2017

Washington State Department of Ecology. 2011. Letter to Bruce Sheppard re: February 2011 Groundwater Compliance Monitoring Report. BNSF Oil Pipeline Site, Tacoma, WA, 15 June 2011. BNSF D Street Pipeline FSID# 2923141.

Washington State Department of Ecology. 2015a. Email from Marv Coleman (Ecology) to Laura Himes (Kennedy/Jenks Consultants). 20 May 2015.

Washington State Department of Ecology. 2015b. Letter to Bruce Sheppard re: Status of Consent Decree No 08 2 1115 4 and No Further Action to complete Cleanup of the BNSF D Street Pipeline Site. 29 April 2015.

Washington State Department of Ecology. 2018. Email RE: Tacoma D Street - Request to Abandon from Marv Coleman (Ecology) to Shane Degross (BNSF). 21 May 2018.

Tables

TABLE 1

SUMMARY OF GROUNDWATER COMPLIANCE MONITORING ANALYTICAL RESULTS
August 2025 Compliance Monitoring
24 October 2025
BNSF D Street Pipeline, Tacoma, Washington

Monitoring Well ID	Sample Date	Total Petroleum Hydrocarbons ^(a) (mg/L)			Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) ^(b) (µg/L)							PAHs ^(b) (µg/L)		
		Diesel Range	Heavy Oil Range	BRPH	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)flouranthene	Benzo(k)flouranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene
MW-2	2/22/2010	--	--	0.49 U	0.0094 U	0.019 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.0099 U
	2/25/2011	--	--	0.45 U	0.0095 U	0.019 UJ	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.012 U	0.0095 U
	11/30/2016	0.250 U	0.500 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
	8/15/2025	0.200 U	0.250 U	--	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.250 U	0.250 U	0.250 U
MW-3	2/22/2010	--	--	0.48 U	0.0094 U	0.019 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.0094 U
	2/25/2011	--	--	0.45 U	0.0095 UJ	0.019 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.012 UJ	0.0095 UJ
	11/30/2016	0.250 U	0.500 U	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.250 U	0.250 U	0.250 U
	8/15/2025	0.200 U	0.250 U	--	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.250 U	0.250 U	0.250 U
MW-4	2/22/2010	--	--	0.49 U	0.0097 U	0.019 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.013 U	0.010 U
	2/25/2011	--	--	0.45 U	0.0094 U	0.019 UJ	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.0094 U
	11/30/2016	0.250 U	0.500 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
	8/15/2025	0.200 U	0.250 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
MW-5	2/22/2010	--	--	0.47 U	0.0094 U	0.019 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.013 U
	2/25/2011	--	--	0.45 U	0.0096 U	0.019 UJ	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.012 U	0.0098 U
	11/30/2016	0.250 U	0.500 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
	8/15/2025	0.200 U	0.250 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
MW-8	2/22/2010	--	--	0.46 U	0.0094 U	0.019 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.014 U
	2/25/2011	--	--	0.48 U	0.0096 UJ	0.019 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.012 UJ	0.0096 UJ
	11/30/2016	0.250 U	0.500 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
	8/15/2025	0.200 U	0.250 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
MW-9	2/22/2010	--	--	0.48 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.012 U	0.012 U
	2/25/2011	--	--	0.45 U	0.0094 U	0.019 UJ	0.0094 UJ	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.0094 U
	11/30/2016	0.250 U	0.500 U	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.250 U	0.250 U	0.250 U
	8/15/2025	0.200 U	0.250 U	--	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.250 U	0.250 U	0.250 U
MW-11	2/22/2010	--	--	0.49 U	0.0095 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.012 U	0.015 U
	2/25/2011	--	--	0.45 U	0.0094 U	0.019 UJ	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.012 U	0.012 U
	11/30/2016	0.250 U	0.500 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
	8/15/2025	0.200 U	0.250 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
DUP-1 (MW-8)	2/25/2011	--	--	0.46 U	0.0096 UJ	0.019 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.012 UJ	0.0096 UJ
DUP-1 (MW-2)	11/30/2016	0.250 U	0.500 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
DUP-1 (MW-5)	8/15/2025	0.200 U	0.250 U	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.500 U	0.500 U
MTCA Method A Cleanup Levels		0.5	0.5	0.5	0.1 ^(c)							160 ^(d)		

Notes:

- (a) Analyzed by Washington State Department of Ecology Method NWTPH-Dx.
- (b) Analyzed by U.S. Environmental Protection Agency (EPA) Method 8270-SIM.
- (c) Cleanup level for cPAHs is defined as the total toxic equivalent concentration of benzo(a)pyrene, as defined in WAC 173-340-708(8)(e).
- (d) Cleanup level is a total value for naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene.
- = Not measured
- mg/L = milligrams per liter
- µg/L = micrograms per liter
- MTCA = Washington State Department of Ecology Model Toxics Control Act (WAC 173-340)
- U = Not detected at or above the listed laboratory reporting limit
- J = Estimated value

TABLE 2

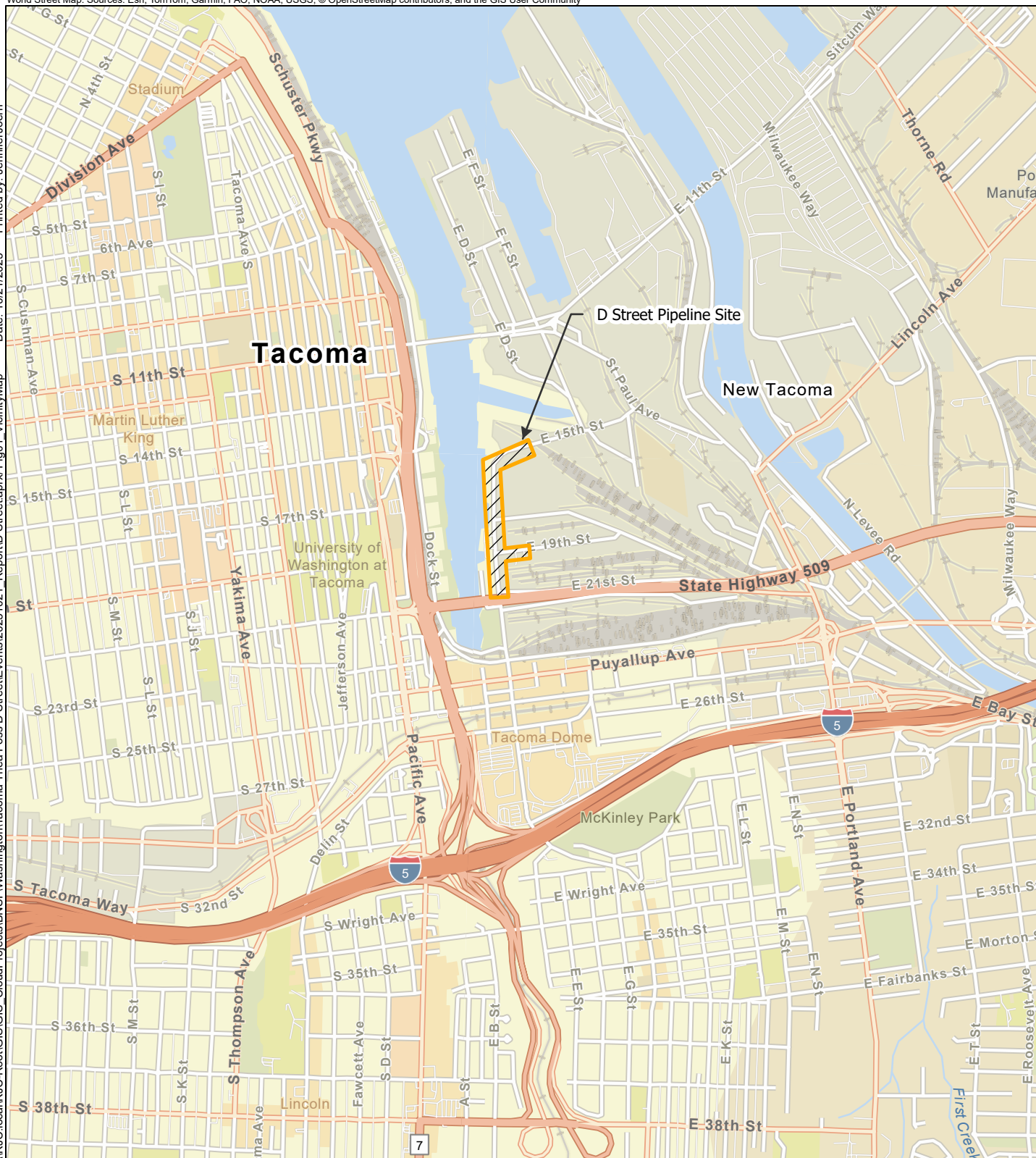
**SUMMARY OF GROUNDWATER COMPLIANCE MONITORING NATURAL ATTENUATION PARAMETERS
August 2025 Compliance Monitoring
24 October 2025
BNSF D Street Pipeline, Tacoma, Washington**

Monitoring Well ID	Sample Date	Field Water Quality Parameters						Natural Attenuation Parameters (mg/L)				
		pH	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (°C)	Dissolved Oxygen (mg/L)	ORP (mV)	Manganese (total)	Manganese (dissolved)	Alkalinity	Nitrate	Sulfate
MW-2	2/22/2010	6.49	940	--	10.84	2.41	-208	2.3	--	290	0.90 U	50
	2/25/2011	6.53	4380	--	10.63	7.8	-127	1.8	--	340	0.90 U	210
	11/30/2016	6.70	556.8	20.86	13.36	0.41	-102.8	1.170	1.260	314	0.102	77.3
	8/15/2025	6.60	23770	3.82	19	0.29	-195.1	0.766	0.811 J-	265 J-	1.000	114.0
MW-3	2/22/2010	6.84	130	--	11.6	--	-153	0.2	--	250	0.90 U	8.4
	2/25/2011	6.20	3510	--	8.55	0.00	-92	1.5	--	330	0.90 U	46.0
	11/30/2016	6.57	4991	6.5	12.85	0.98	-108.1	2.090	2.400	332	0.100 U	59.6
	8/15/2025	6.90	3776	35.97	17.9	1.04	-232.2	0.900	0.877 J-	252 J-	0.500	68.9
MW-4	2/22/2010	6.14	300	--	11.12	1.71	-112	1.3	--	450	0.90 U	57
	2/25/2011	6.00	2660	--	9.1	0.00	-83	1.0	--	430	0.90 U	14
	11/30/2016	6.32	2708	4.45	12.29	0.90	-185.0	1.460	1.390	323	0.100 U	5 U
	8/15/2025	6.40	7793	261.20	18.6	0.72	-96.0	2.030	2.230 J-	335 J-	0.500	170
MW-5	2/22/2010	6.24	1400	--	11.1	--	-125	1.1	--	400	0.90 U	490
	2/25/2011	6.23	8320	--	11.94	0.00	-133	1.7	--	400	0.90 U	340
	11/30/2016	6.63	4870	0.76	12.58	1.04	-239.2	0.643	0.648	391	0.100 U	18.8
	8/15/2025	6.30	11515	5.86	20.5	0.41	-197.9	2.250	2.250 J-	297 J-	0.500	412
MW-8	2/22/2010	6.40	2630	--	10.5	--	-194	0.46	--	240	0.90 U	1100
	2/25/2011	6.36	27600	--	11.45	0.00	-198	0.35	--	210	0.90 U	1200
	11/30/2016	6.42	3318	0.82	12.38	0.64	-201.6	0.304	0.332	252	0.100 U	1360
	8/15/2025	6.40	25973	3.05	18.6	0.21	-263.5	0.265	0.260 J-	314 J-	1.000	913
MW-9	2/22/2010	7.20	160	--	9.49	3.65	-272	0.049	--	280	0.90 U	87
	2/25/2011	6.79	1320	--	11.38	0.09	-101	0.034	--	360	0.90 U	50
	11/30/2016	6.98	1451	6.9	13.22	0.93	-154.8	0.260	0.251	349	0.100 U	5.0 U
	8/15/2025	7.20	829	21.72	18.5	0.40	-180.0	0.175	0.177 J-	298 J-	0.100	18.0
MW-11	2/22/2010	6.34	3030	--	9.86	1.96	-289	0.91	--	300	0.90 U	1100
	2/25/2011	6.12	23500	--	9.21	0.00	-126	0.71	--	270	0.90 U	1000
	11/30/2016	6.43	2884	0.22	11.46	0.89	-282.0	0.569	0.586	311	11.500	1100
	8/15/2025	6.40	24598	18.62	18.2	0.23	-272.1	0.641	0.660 J-	406 J-	1.000	976
DUP-01(MW-8)	2/25/2011	--	--	--	--	--	--	0.330	--	210	0.90 U	1200
DUP-1(MW-2)	11/30/2016	--	--	--	--	--	--	1.140	1.260	258	0.104	77.6
DUP-1(MW-5)	8/15/2025	--	--	--	--	--	--	2.250	2.400 J-	296 J-	0.500	374.0

Notes:

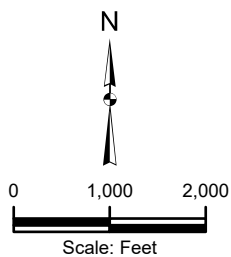
- mS/cm = microsiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- °C = degrees celsius
- ORP = oxidation-reduction potential
- mg/L = milligrams per liter
- mV = millivolts
- J- = Results were detected, qualified as estimated, J- due to potential impact of the method deviation of filtering the samples twice
- = Not measured

Figures



Legend

 Approximate Site Extent



 Kennedy Jenks

BNSF D Street Oil Pipeline Site
Tacoma, Washington



Vicinity Map

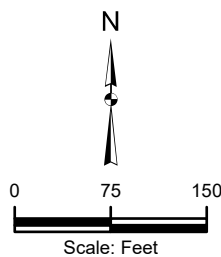
2596139*00

Figure 1



Legend

-  Monitoring Well Location and Designation
-  Approximate Site Extent



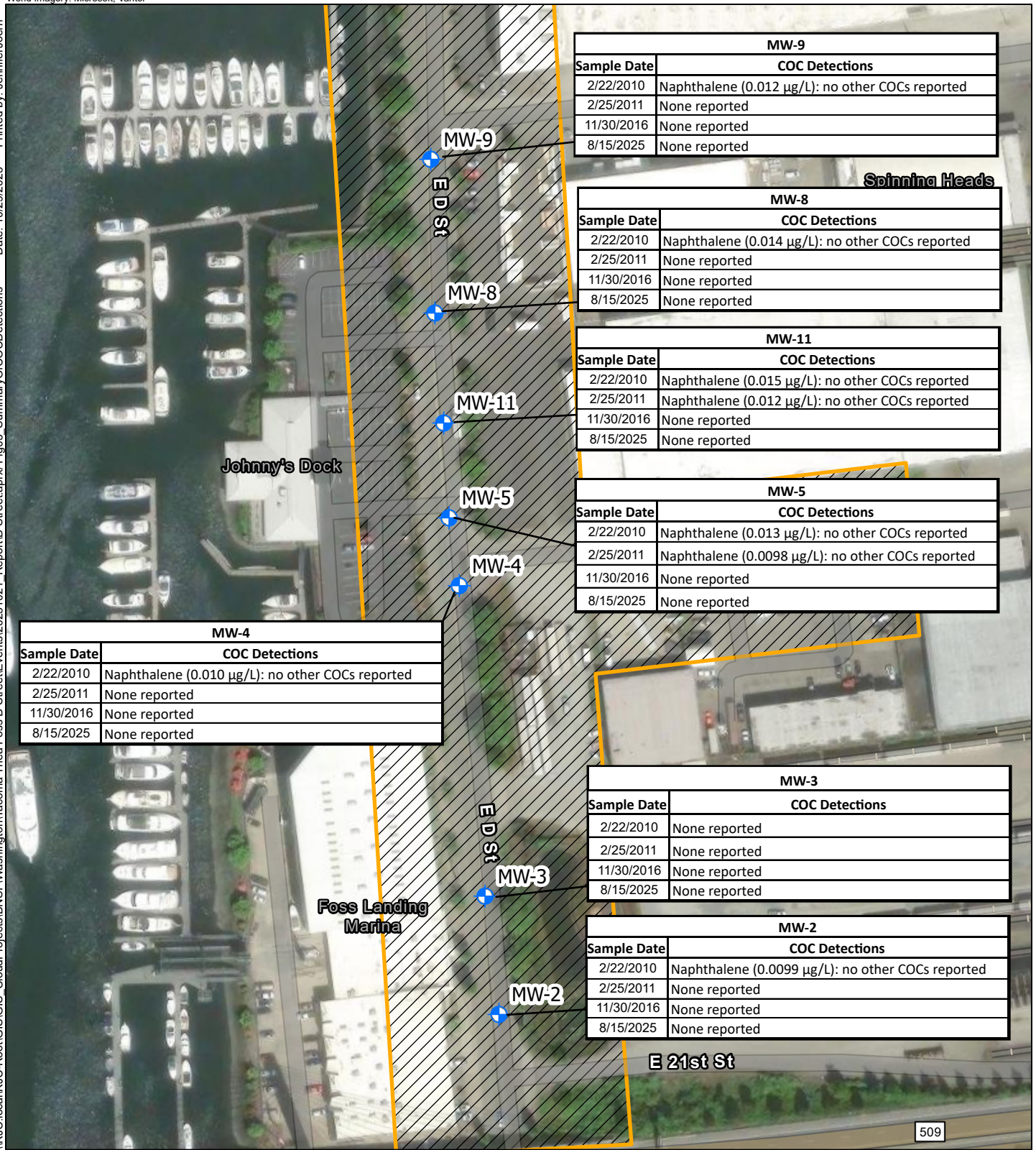
KJ Kennedy Jenks

BNSF D Street Oil Pipeline Site
Tacoma, Washington



Site Map

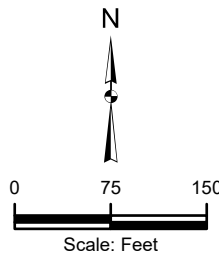
2596139*00

Figure 2



Legend

-  Monitoring Well Location and Designation
-  Approximate Site Extent



KJ Kennedy Jenks

BNSF D Street Oil Pipeline Site
Tacoma, Washington

Summary of COC Detections

2596139*00

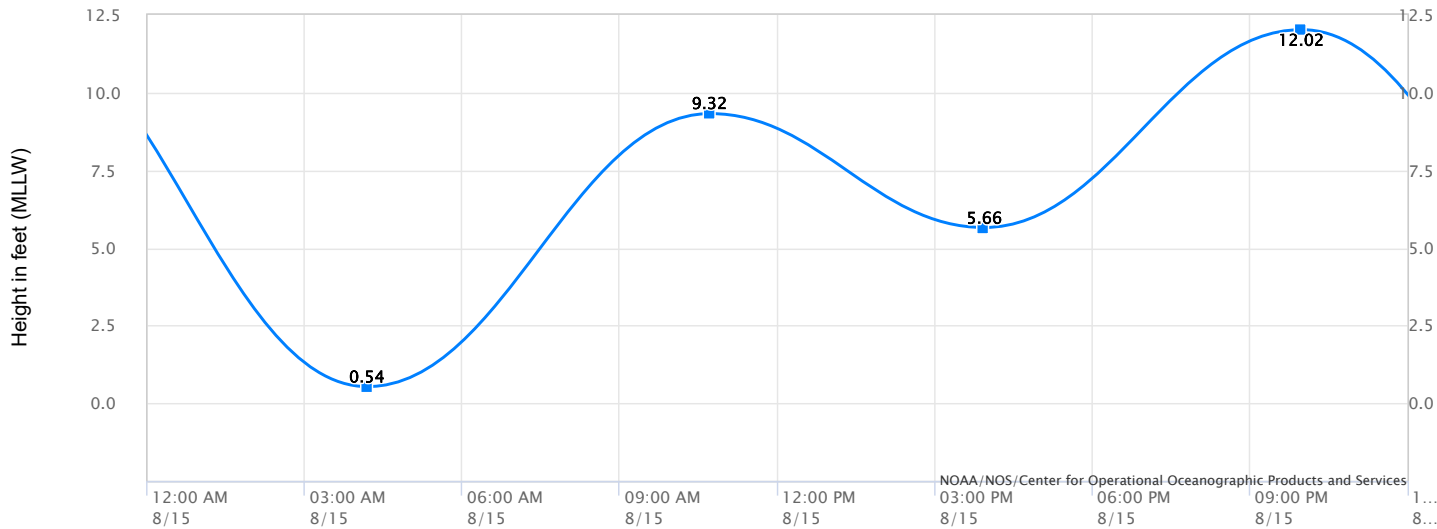
Figure 3

Attachment A

Summary of NOAA Tide Tables During Field Events



NOAA/NOS/CO-OPS
Tide Predictions at 9446484, Tacoma WA
 From 2025/08/15 12:00 AM LST/LDT to 2025/08/15 11:59 PM LST/LDT



Note: The interval is High/Low, the solid blue line depicts a curve fit between the high and low values and approximates the segments between.
 Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

High/Low Tide Prediction Data Listing

Station Name: Tacoma, WA
 Action: Daily
 Product: Tide Predictions
 Start Date & Time: 2025/8/15 12:00 AM
 End Date & Time: 2025/8/15 11:59 PM

Source: NOAA/NOS/CO-OPS
 Prediction Type: Harmonic
 Datum: MLLW
 Height Units: Feet
 Time Zone: LST/LDT

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2025/08/15	Fri	04:11 AM	0.54 L	10:43 AM	9.32 H	3:56 PM	5.66 L	9:59 PM	12.02 H

Attachment B

Laboratory Analytical Report and Chain-of-Custody Documentation

Kennedy/Jenks Con-BNSF Region 1

Sample Delivery Group: L1889400
Samples Received: 08/16/2025
Project Number: 2596139*00
Description: BNSF - Tacoma Thea Foss D Street

Report To: Noah Butzine
320001 32nd Ave South
Suite 300
Federal Way, WA 98001

Entire Report Reviewed By:



Andi R Jones
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW-2(20250815) L1889400-01	6
MW-3(20250815) L1889400-02	8
MW-4(20250815) L1889400-03	10
MW-5(20250815) L1889400-04	12
MW-11(20250815) L1889400-05	14
MW-8(20250815) L1889400-06	16
MW-9(20250815) L1889400-07	18
DUP-01-20250815 L1889400-08	20
Qc: Quality Control Summary	22
Wet Chemistry by Method 2320 B-2011	22
Wet Chemistry by Method 2520 B-2011	23
Wet Chemistry by Method 9056A	24
Metals (ICPMS) by Method 6020B	26
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	28
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	29
Is: Internal Standard Summary	31
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	31
Gl: Glossary of Terms	32
Al: Accreditations & Locations	33
Sc: Sample Chain of Custody	34



SAMPLE SUMMARY

MW-2(20250815) L1889400-01

Collected by Robert Ardissono Collected date/time 08/15/25 11:25 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:05	08/23/25 08:05	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	10	08/17/25 00:44	08/17/25 00:44	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	100	08/17/25 00:57	08/17/25 00:57	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	1	08/24/25 13:44	09/15/25 11:12	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	5	08/23/25 20:14	09/11/25 16:16	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/19/25 23:45	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	1	08/20/25 16:20	08/26/25 11:24	CMF	Mt. Juliet, TN



MW-3(20250815) L1889400-02

Collected by Robert Ardissono Collected date/time 08/15/25 12:25 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:10	08/23/25 08:10	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	5	08/17/25 01:10	08/17/25 01:10	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	1	08/24/25 13:44	09/15/25 11:15	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	5	08/23/25 20:14	09/11/25 16:19	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 00:05	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	1	08/20/25 16:20	08/26/25 11:43	CMF	Mt. Juliet, TN

MW-4(20250815) L1889400-03

Collected by Robert Ardissono Collected date/time 08/15/25 13:30 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:15	08/23/25 08:15	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	5	08/17/25 01:22	08/17/25 01:22	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	1	08/24/25 13:44	09/15/25 11:19	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	10	08/23/25 20:14	09/11/25 16:23	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 00:25	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	2	08/20/25 16:20	08/26/25 12:01	CMF	Mt. Juliet, TN

MW-5(20250815) L1889400-04

Collected by Robert Ardissono Collected date/time 08/15/25 14:20 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:19	08/23/25 08:19	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	5	08/17/25 01:47	08/17/25 01:47	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	5	08/24/25 13:44	09/15/25 11:42	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	10	08/23/25 20:14	09/11/25 16:26	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 00:45	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	2	08/20/25 16:20	08/26/25 14:04	CMF	Mt. Juliet, TN

MW-11(20250815) L1889400-05

Collected by Robert Ardissono Collected date/time 08/15/25 15:00 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:24	08/23/25 08:24	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	10	08/17/25 02:12	08/17/25 02:12	DLH	Mt. Juliet, TN

SAMPLE SUMMARY

MW-11(20250815) L1889400-05

Collected by Robert Ardissono Collected date/time 08/15/25 15:00 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2583521	5	08/24/25 13:44	09/15/25 11:45	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	5	08/23/25 20:14	09/11/25 16:29	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 01:06	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	2	08/20/25 16:20	08/28/25 04:03	CMF	Mt. Juliet, TN



MW-8(20250815) L1889400-06

Collected by Robert Ardissono Collected date/time 08/15/25 15:30 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:28	08/23/25 08:28	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	10	08/17/25 03:03	08/17/25 03:03	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	5	08/24/25 13:44	09/15/25 11:48	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	1	08/23/25 20:14	09/11/25 14:39	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 01:26	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	2	08/20/25 16:20	08/28/25 04:22	CMF	Mt. Juliet, TN

MW-9(20250815) L1889400-07

Collected by Robert Ardissono Collected date/time 08/15/25 16:05 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:33	08/23/25 08:33	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	1	08/17/25 03:28	08/17/25 03:28	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	5	08/24/25 13:44	09/15/25 11:52	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	1	08/23/25 20:14	09/11/25 14:42	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 01:46	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	1	08/20/25 16:20	08/28/25 04:41	CMF	Mt. Juliet, TN

DUP-01-20250815 L1889400-08

Collected by Robert Ardissono Collected date/time 08/15/25 08:00 Received date/time 08/16/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG2585678	1	08/23/25 08:38	08/23/25 08:38	RJP	Mt. Juliet, TN
Wet Chemistry by Method 2520 B-2011	WG2591068	1	08/30/25 23:15	08/30/25 23:15	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2581258	5	08/17/25 04:18	08/17/25 04:18	DLH	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583521	5	08/24/25 13:44	09/15/25 11:55	JDB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2583664	10	08/23/25 20:14	09/11/25 16:32	JPD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG2581595	1	08/17/25 16:34	08/20/25 02:06	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2583351	2	08/20/25 16:20	08/28/25 05:00	CMF	Mt. Juliet, TN

CASE NARRATIVE

Unless qualified or notated within the narrative below, all sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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.



Andi R Jones
Project Manager

Metals (ICPMS) by Method 6020B

Analysis was filtered in the laboratory.

Batch	Method	Lab Sample ID
WG2583521	6020B	L1889400-01, 02, 03, 04, 05, 06, 07, 08



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	265000		4750	20000	1	08/23/2025 08:05	WG2585678

Sample Narrative:

L1889400-01 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	PSU		PSU		date / time	
Salinity	16.2		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate as (N)	U		884	1000	10	08/17/2025 00:44	WG2581258
Sulfate	1140000		63700	500000	100	08/17/2025 00:57	WG2581258

Sample Narrative:

L1889400-01 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Manganese	766		3.50	25.0	5	09/11/2025 16:16	WG2583664
Manganese,Dissolved	811		0.700	5.00	1	09/15/2025 11:12	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		60.5	200	1	08/19/2025 23:45	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/19/2025 23:45	WG2581595
(S) o-Terphenyl	80.5			52.0-156		08/19/2025 23:45	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0210	0.0500	1	08/26/2025 11:24	WG2583351
Acenaphthene	U		0.0202	0.0500	1	08/26/2025 11:24	WG2583351
Acenaphthylene	U		0.0221	0.0500	1	08/26/2025 11:24	WG2583351
Benzo(a)anthracene	U		0.0242	0.0500	1	08/26/2025 11:24	WG2583351
Benzo(a)pyrene	U		0.0272	0.0500	1	08/26/2025 11:24	WG2583351
Benzo(b)fluoranthene	U		0.0253	0.0500	1	08/26/2025 11:24	WG2583351
Benzo(g,h,i)perylene	U		0.0335	0.0500	1	08/26/2025 11:24	WG2583351
Benzo(k)fluoranthene	U		0.0254	0.0500	1	08/26/2025 11:24	WG2583351
Chrysene	U		0.0257	0.0500	1	08/26/2025 11:24	WG2583351
Dibenz(a,h)anthracene	U		0.0251	0.0500	1	08/26/2025 11:24	WG2583351
Fluoranthene	U		0.0375	0.0500	1	08/26/2025 11:24	WG2583351
Fluorene	U		0.0212	0.0500	1	08/26/2025 11:24	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0270	0.0500	1	08/26/2025 11:24	WG2583351
Naphthalene	U		0.118	0.250	1	08/26/2025 11:24	WG2583351
Phenanthrene	U		0.0279	0.0500	1	08/26/2025 11:24	WG2583351
Pyrene	U		0.0416	0.0500	1	08/26/2025 11:24	WG2583351
1-Methylnaphthalene	U		0.112	0.250	1	08/26/2025 11:24	WG2583351
2-Methylnaphthalene	U		0.117	0.250	1	08/26/2025 11:24	WG2583351



Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.111	0.250	1	08/26/2025 11:24	WG2583351
(S) Nitrobenzene-d5	85.3			31.0-160		08/26/2025 11:24	WG2583351
(S) 2-Fluorobiphenyl	102			48.0-148		08/26/2025 11:24	WG2583351
(S) p-Terphenyl-d14	96.8			37.0-146		08/26/2025 11:24	WG2583351

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Is
- 8 Gl
- 9 Al
- 10 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	252000		4750	20000	1	08/23/2025 08:10	WG2585678

Sample Narrative:

L1889400-02 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	PSU		PSU		date / time	
Salinity	2.20		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate as (N)	U		442	500	5	08/17/2025 01:10	WG2581258
Sulfate	68900		3180	25000	5	08/17/2025 01:10	WG2581258

Sample Narrative:

L1889400-02 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Manganese	900		3.50	25.0	5	09/11/2025 16:19	WG2583664
Manganese,Dissolved	877		0.700	5.00	1	09/15/2025 11:15	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 00:05	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 00:05	WG2581595
(S) o-Terphenyl	84.2			52.0-156		08/20/2025 00:05	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0210	0.0500	1	08/26/2025 11:43	WG2583351
Acenaphthene	U		0.0202	0.0500	1	08/26/2025 11:43	WG2583351
Acenaphthylene	U		0.0221	0.0500	1	08/26/2025 11:43	WG2583351
Benzo(a)anthracene	U		0.0242	0.0500	1	08/26/2025 11:43	WG2583351
Benzo(a)pyrene	U		0.0272	0.0500	1	08/26/2025 11:43	WG2583351
Benzo(b)fluoranthene	U		0.0253	0.0500	1	08/26/2025 11:43	WG2583351
Benzo(g,h,i)perylene	U		0.0335	0.0500	1	08/26/2025 11:43	WG2583351
Benzo(k)fluoranthene	U		0.0254	0.0500	1	08/26/2025 11:43	WG2583351
Chrysene	U		0.0257	0.0500	1	08/26/2025 11:43	WG2583351
Dibenz(a,h)anthracene	U		0.0251	0.0500	1	08/26/2025 11:43	WG2583351
Fluoranthene	U		0.0375	0.0500	1	08/26/2025 11:43	WG2583351
Fluorene	U		0.0212	0.0500	1	08/26/2025 11:43	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0270	0.0500	1	08/26/2025 11:43	WG2583351
Naphthalene	U		0.118	0.250	1	08/26/2025 11:43	WG2583351
Phenanthrene	U		0.0279	0.0500	1	08/26/2025 11:43	WG2583351
Pyrene	U		0.0416	0.0500	1	08/26/2025 11:43	WG2583351
1-Methylnaphthalene	U		0.112	0.250	1	08/26/2025 11:43	WG2583351
2-Methylnaphthalene	U		0.117	0.250	1	08/26/2025 11:43	WG2583351

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.111	0.250	1	08/26/2025 11:43	WG2583351
(S) Nitrobenzene-d5	85.3			31.0-160		08/26/2025 11:43	WG2583351
(S) 2-Fluorobiphenyl	103			48.0-148		08/26/2025 11:43	WG2583351
(S) p-Terphenyl-d14	97.9			37.0-146		08/26/2025 11:43	WG2583351

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Is

⁸Gl

⁹Al

¹⁰Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	335000		4750	20000	1	08/23/2025 08:15	WG2585678

Sample Narrative:

L1889400-03 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	PSU		PSU		date / time	
Salinity	4.95		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate as (N)	U		442	500	5	08/17/2025 01:22	WG2581258
Sulfate	170000		3180	25000	5	08/17/2025 01:22	WG2581258

Sample Narrative:

L1889400-03 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Manganese	2030		7.00	50.0	10	09/11/2025 16:23	WG2583664
Manganese,Dissolved	2230		0.700	5.00	1	09/15/2025 11:19	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 00:25	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 00:25	WG2581595
(S) o-Terphenyl	79.5			52.0-156		08/20/2025 00:25	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0420	0.100	2	08/26/2025 12:01	WG2583351
Acenaphthene	U		0.0404	0.100	2	08/26/2025 12:01	WG2583351
Acenaphthylene	U		0.0442	0.100	2	08/26/2025 12:01	WG2583351
Benzo(a)anthracene	U		0.0484	0.100	2	08/26/2025 12:01	WG2583351
Benzo(a)pyrene	U		0.0544	0.100	2	08/26/2025 12:01	WG2583351
Benzo(b)fluoranthene	U		0.0506	0.100	2	08/26/2025 12:01	WG2583351
Benzo(g,h,i)perylene	U		0.0670	0.100	2	08/26/2025 12:01	WG2583351
Benzo(k)fluoranthene	U		0.0508	0.100	2	08/26/2025 12:01	WG2583351
Chrysene	U		0.0514	0.100	2	08/26/2025 12:01	WG2583351
Dibenz(a,h)anthracene	U		0.0502	0.100	2	08/26/2025 12:01	WG2583351
Fluoranthene	U		0.0750	0.100	2	08/26/2025 12:01	WG2583351
Fluorene	U		0.0424	0.100	2	08/26/2025 12:01	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0540	0.100	2	08/26/2025 12:01	WG2583351
Naphthalene	U		0.236	0.500	2	08/26/2025 12:01	WG2583351
Phenanthrene	U		0.0558	0.100	2	08/26/2025 12:01	WG2583351
Pyrene	U		0.0832	0.100	2	08/26/2025 12:01	WG2583351
1-Methylnaphthalene	U		0.224	0.500	2	08/26/2025 12:01	WG2583351
2-Methylnaphthalene	U		0.234	0.500	2	08/26/2025 12:01	WG2583351



Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.222	0.500	2	08/26/2025 12:01	WG2583351
(S) Nitrobenzene-d5	82.6			31.0-160		08/26/2025 12:01	WG2583351
(S) 2-Fluorobiphenyl	101			48.0-148		08/26/2025 12:01	WG2583351
(S) p-Terphenyl-d14	98.9			37.0-146		08/26/2025 12:01	WG2583351

Sample Narrative:

L1889400-03 WG2583351: Dilution due to matrix impact during extraction procedure

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Is
- 8 Gl
- 9 Al
- 10 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	297000		4750	20000	1	08/23/2025 08:19	WG2585678

Sample Narrative:

L1889400-04 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	PSU		PSU		date / time	
Salinity	7.54		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate as (N)	U		442	500	5	08/17/2025 01:47	WG2581258
Sulfate	412000		3180	25000	5	08/17/2025 01:47	WG2581258

Sample Narrative:

L1889400-04 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Manganese	2250		7.00	50.0	10	09/11/2025 16:26	WG2583664
Manganese,Dissolved	2250		3.50	25.0	5	09/15/2025 11:42	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 00:45	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 00:45	WG2581595
(S) o-Terphenyl	83.2			52.0-156		08/20/2025 00:45	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0420	0.100	2	08/26/2025 14:04	WG2583351
Acenaphthene	U		0.0404	0.100	2	08/26/2025 14:04	WG2583351
Acenaphthylene	U		0.0442	0.100	2	08/26/2025 14:04	WG2583351
Benzo(a)anthracene	U		0.0484	0.100	2	08/26/2025 14:04	WG2583351
Benzo(a)pyrene	U		0.0544	0.100	2	08/26/2025 14:04	WG2583351
Benzo(b)fluoranthene	U		0.0506	0.100	2	08/26/2025 14:04	WG2583351
Benzo(g,h,i)perylene	U		0.0670	0.100	2	08/26/2025 14:04	WG2583351
Benzo(k)fluoranthene	U		0.0508	0.100	2	08/26/2025 14:04	WG2583351
Chrysene	U		0.0514	0.100	2	08/26/2025 14:04	WG2583351
Dibenz(a,h)anthracene	U		0.0502	0.100	2	08/26/2025 14:04	WG2583351
Fluoranthene	U		0.0750	0.100	2	08/26/2025 14:04	WG2583351
Fluorene	U		0.0424	0.100	2	08/26/2025 14:04	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0540	0.100	2	08/26/2025 14:04	WG2583351
Naphthalene	U		0.236	0.500	2	08/26/2025 14:04	WG2583351
Phenanthrene	U		0.0558	0.100	2	08/26/2025 14:04	WG2583351
Pyrene	U		0.0832	0.100	2	08/26/2025 14:04	WG2583351
1-Methylnaphthalene	U		0.224	0.500	2	08/26/2025 14:04	WG2583351
2-Methylnaphthalene	U		0.234	0.500	2	08/26/2025 14:04	WG2583351

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.222	0.500	2	08/26/2025 14:04	WG2583351
(S) Nitrobenzene-d5	92.1			31.0-160		08/26/2025 14:04	WG2583351
(S) 2-Fluorobiphenyl	104			48.0-148		08/26/2025 14:04	WG2583351
(S) p-Terphenyl-d14	100			37.0-146		08/26/2025 14:04	WG2583351

Sample Narrative:

L1889400-04 WG2583351: Dilution due to matrix impact during extraction procedure

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Is
- 8 Gl
- 9 Al
- 10 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Alkalinity	406000		4750	20000	1	08/23/2025 08:24	WG2585678

Sample Narrative:

L1889400-05 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Salinity	16.4		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Nitrate as (N)	U		884	1000	10	08/17/2025 02:12	WG2581258
Sulfate	976000		6370	50000	10	08/17/2025 02:12	WG2581258

Sample Narrative:

L1889400-05 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Manganese	641		3.50	25.0	5	09/11/2025 16:29	WG2583664
Manganese,Dissolved	660		3.50	25.0	5	09/15/2025 11:45	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 01:06	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 01:06	WG2581595
(S) o-Terphenyl	80.5			52.0-156		08/20/2025 01:06	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Anthracene	U		0.0420	0.100	2	08/28/2025 04:03	WG2583351
Acenaphthene	U		0.0404	0.100	2	08/28/2025 04:03	WG2583351
Acenaphthylene	U		0.0442	0.100	2	08/28/2025 04:03	WG2583351
Benzo(a)anthracene	U		0.0484	0.100	2	08/28/2025 04:03	WG2583351
Benzo(a)pyrene	U		0.0544	0.100	2	08/28/2025 04:03	WG2583351
Benzo(b)fluoranthene	U		0.0506	0.100	2	08/28/2025 04:03	WG2583351
Benzo(g,h,i)perylene	U		0.0670	0.100	2	08/28/2025 04:03	WG2583351
Benzo(k)fluoranthene	U		0.0508	0.100	2	08/28/2025 04:03	WG2583351
Chrysene	U		0.0514	0.100	2	08/28/2025 04:03	WG2583351
Dibenz(a,h)anthracene	U		0.0502	0.100	2	08/28/2025 04:03	WG2583351
Fluoranthene	U		0.0750	0.100	2	08/28/2025 04:03	WG2583351
Fluorene	U		0.0424	0.100	2	08/28/2025 04:03	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0540	0.100	2	08/28/2025 04:03	WG2583351
Naphthalene	U		0.236	0.500	2	08/28/2025 04:03	WG2583351
Phenanthrene	U		0.0558	0.100	2	08/28/2025 04:03	WG2583351
Pyrene	U		0.0832	0.100	2	08/28/2025 04:03	WG2583351
1-Methylnaphthalene	U		0.224	0.500	2	08/28/2025 04:03	WG2583351
2-Methylnaphthalene	U		0.234	0.500	2	08/28/2025 04:03	WG2583351



Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.222	0.500	2	08/28/2025 04:03	WG2583351
(S) Nitrobenzene-d5	92.1			31.0-160		08/28/2025 04:03	WG2583351
(S) 2-Fluorobiphenyl	98.4			48.0-148		08/28/2025 04:03	WG2583351
(S) p-Terphenyl-d14	93.7			37.0-146		08/28/2025 04:03	WG2583351

Sample Narrative:

L1889400-05 WG2583351: Dilution due to matrix impact during extraction procedure

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Is
- ⁸Gl
- ⁹Al
- ¹⁰Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	314000		4750	20000	1	08/23/2025 08:28	WG2585678

Sample Narrative:

L1889400-06 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	PSU		PSU		date / time	
Salinity	17.7		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate as (N)	U		884	1000	10	08/17/2025 03:03	WG2581258
Sulfate	913000		6370	50000	10	08/17/2025 03:03	WG2581258

Sample Narrative:

L1889400-06 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Manganese	265		0.700	5.00	1	09/11/2025 14:39	WG2583664
Manganese,Dissolved	260		3.50	25.0	5	09/15/2025 11:48	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 01:26	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 01:26	WG2581595
(S) o-Terphenyl	84.7			52.0-156		08/20/2025 01:26	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0420	0.100	2	08/28/2025 04:22	WG2583351
Acenaphthene	U		0.0404	0.100	2	08/28/2025 04:22	WG2583351
Acenaphthylene	U		0.0442	0.100	2	08/28/2025 04:22	WG2583351
Benzo(a)anthracene	U		0.0484	0.100	2	08/28/2025 04:22	WG2583351
Benzo(a)pyrene	U		0.0544	0.100	2	08/28/2025 04:22	WG2583351
Benzo(b)fluoranthene	U		0.0506	0.100	2	08/28/2025 04:22	WG2583351
Benzo(g,h,i)perylene	U		0.0670	0.100	2	08/28/2025 04:22	WG2583351
Benzo(k)fluoranthene	U		0.0508	0.100	2	08/28/2025 04:22	WG2583351
Chrysene	U		0.0514	0.100	2	08/28/2025 04:22	WG2583351
Dibenz(a,h)anthracene	U		0.0502	0.100	2	08/28/2025 04:22	WG2583351
Fluoranthene	U		0.0750	0.100	2	08/28/2025 04:22	WG2583351
Fluorene	U		0.0424	0.100	2	08/28/2025 04:22	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0540	0.100	2	08/28/2025 04:22	WG2583351
Naphthalene	U		0.236	0.500	2	08/28/2025 04:22	WG2583351
Phenanthrene	U		0.0558	0.100	2	08/28/2025 04:22	WG2583351
Pyrene	U		0.0832	0.100	2	08/28/2025 04:22	WG2583351
1-Methylnaphthalene	U		0.224	0.500	2	08/28/2025 04:22	WG2583351
2-Methylnaphthalene	U		0.234	0.500	2	08/28/2025 04:22	WG2583351



Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.222	0.500	2	08/28/2025 04:22	WG2583351
(S) Nitrobenzene-d5	87.4			31.0-160		08/28/2025 04:22	WG2583351
(S) 2-Fluorobiphenyl	98.9			48.0-148		08/28/2025 04:22	WG2583351
(S) p-Terphenyl-d14	94.2			37.0-146		08/28/2025 04:22	WG2583351

Sample Narrative:

L1889400-06 WG2583351: Dilution due to matrix impact during extraction procedure

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Is
- ⁸Gl
- ⁹Al
- ¹⁰Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Alkalinity	298000		4750	20000	1	08/23/2025 08:33	WG2585678

Sample Narrative:

L1889400-07 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Salinity	0.430		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Nitrate as (N)	U		88.4	100	1	08/17/2025 03:28	WG2581258
Sulfate	18000		637	5000	1	08/17/2025 03:28	WG2581258

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Manganese	175		0.700	5.00	1	09/11/2025 14:42	WG2583664
Manganese,Dissolved	177		3.50	25.0	5	09/15/2025 11:52	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 01:46	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 01:46	WG2581595
(S) o-Terphenyl	80.5			52.0-156		08/20/2025 01:46	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Anthracene	U		0.0210	0.0500	1	08/28/2025 04:41	WG2583351
Acenaphthene	U		0.0202	0.0500	1	08/28/2025 04:41	WG2583351
Acenaphthylene	U		0.0221	0.0500	1	08/28/2025 04:41	WG2583351
Benzo(a)anthracene	U		0.0242	0.0500	1	08/28/2025 04:41	WG2583351
Benzo(a)pyrene	U		0.0272	0.0500	1	08/28/2025 04:41	WG2583351
Benzo(b)fluoranthene	U		0.0253	0.0500	1	08/28/2025 04:41	WG2583351
Benzo(g,h,i)perylene	U		0.0335	0.0500	1	08/28/2025 04:41	WG2583351
Benzo(k)fluoranthene	U		0.0254	0.0500	1	08/28/2025 04:41	WG2583351
Chrysene	U		0.0257	0.0500	1	08/28/2025 04:41	WG2583351
Dibenz(a,h)anthracene	U		0.0251	0.0500	1	08/28/2025 04:41	WG2583351
Fluoranthene	U		0.0375	0.0500	1	08/28/2025 04:41	WG2583351
Fluorene	U		0.0212	0.0500	1	08/28/2025 04:41	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0270	0.0500	1	08/28/2025 04:41	WG2583351
Naphthalene	U		0.118	0.250	1	08/28/2025 04:41	WG2583351
Phenanthrene	U		0.0279	0.0500	1	08/28/2025 04:41	WG2583351
Pyrene	U		0.0416	0.0500	1	08/28/2025 04:41	WG2583351
1-Methylnaphthalene	U		0.112	0.250	1	08/28/2025 04:41	WG2583351
2-Methylnaphthalene	U		0.117	0.250	1	08/28/2025 04:41	WG2583351
2-Chloronaphthalene	U		0.111	0.250	1	08/28/2025 04:41	WG2583351
(S) Nitrobenzene-d5	94.7			31.0-160		08/28/2025 04:41	WG2583351
(S) 2-Fluorobiphenyl	107			48.0-148		08/28/2025 04:41	WG2583351



Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
(S) p-Terphenyl-d14	102		ug/l	ug/l		date / time	WG2583351

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Is
- ⁸Gl
- ⁹Al
- ¹⁰Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Alkalinity	296000		4750	20000	1	08/23/2025 08:38	WG2585678

Sample Narrative:

L1889400-08 WG2585678: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 2520 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Salinity	7.57		0.0500	1	08/30/2025 23:15	WG2591068

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Nitrate as (N)	U		442	500	5	08/17/2025 04:18	WG2581258
Sulfate	374000		3180	25000	5	08/17/2025 04:18	WG2581258

Sample Narrative:

L1889400-08 WG2581258: Dilution due to matrix impact on instrumentation at lower dilution

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Manganese	2250		7.00	50.0	10	09/11/2025 16:32	WG2583664
Manganese,Dissolved	2400		3.50	25.0	5	09/15/2025 11:55	WG2583521

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		60.5	200	1	08/20/2025 02:06	WG2581595
Residual Range Organics (RRO)	U		77.2	250	1	08/20/2025 02:06	WG2581595
(S) o-Terphenyl	82.1			52.0-156		08/20/2025 02:06	WG2581595

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Anthracene	U		0.0420	0.100	2	08/28/2025 05:00	WG2583351
Acenaphthene	U		0.0404	0.100	2	08/28/2025 05:00	WG2583351
Acenaphthylene	U		0.0442	0.100	2	08/28/2025 05:00	WG2583351
Benzo(a)anthracene	U		0.0484	0.100	2	08/28/2025 05:00	WG2583351
Benzo(a)pyrene	U		0.0544	0.100	2	08/28/2025 05:00	WG2583351
Benzo(b)fluoranthene	U		0.0506	0.100	2	08/28/2025 05:00	WG2583351
Benzo(g,h,i)perylene	U		0.0670	0.100	2	08/28/2025 05:00	WG2583351
Benzo(k)fluoranthene	U		0.0508	0.100	2	08/28/2025 05:00	WG2583351
Chrysene	U		0.0514	0.100	2	08/28/2025 05:00	WG2583351
Dibenz(a,h)anthracene	U		0.0502	0.100	2	08/28/2025 05:00	WG2583351
Fluoranthene	U		0.0750	0.100	2	08/28/2025 05:00	WG2583351
Fluorene	U		0.0424	0.100	2	08/28/2025 05:00	WG2583351
Indeno(1,2,3-cd)pyrene	U		0.0540	0.100	2	08/28/2025 05:00	WG2583351
Naphthalene	U		0.236	0.500	2	08/28/2025 05:00	WG2583351
Phenanthrene	U		0.0558	0.100	2	08/28/2025 05:00	WG2583351
Pyrene	U		0.0832	0.100	2	08/28/2025 05:00	WG2583351
1-Methylnaphthalene	U		0.224	0.500	2	08/28/2025 05:00	WG2583351
2-Methylnaphthalene	U		0.234	0.500	2	08/28/2025 05:00	WG2583351



Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
2-Chloronaphthalene	U		0.222	0.500	2	08/28/2025 05:00	WG2583351
(S) Nitrobenzene-d5	87.9			31.0-160		08/28/2025 05:00	WG2583351
(S) 2-Fluorobiphenyl	95.3			48.0-148		08/28/2025 05:00	WG2583351
(S) p-Terphenyl-d14	87.4			37.0-146		08/28/2025 05:00	WG2583351

Sample Narrative:

L1889400-08 WG2583351: Dilution due to matrix impact during extraction procedure

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Is
- ⁸Gl
- ⁹Al
- ¹⁰Sc

Method Blank (MB)

(MB) R4262942-2 08/23/25 07:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	U		4750	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1887641-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1887641-01 08/23/25 07:22 • (DUP) R4262942-3 08/23/25 07:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	3890000	3880000	1	0.194		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1889661-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1889661-03 08/23/25 08:58 • (DUP) R4262942-4 08/23/25 09:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	144000	144000	1	0.153		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R4262942-1 08/23/25 07:04

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	109000	109	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5



Method Blank (MB)

(MB) R4266655-1 08/30/25 23:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Salinity	U		0.0500	0.0500

¹Cp

²Tc

³Ss

L1889400-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1889400-01 08/30/25 23:15 • (DUP) R4266655-3 08/30/25 23:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Salinity	16.2	16.2	1	0.247		20

⁴Cn

⁵Sr

⁶Qc

L1892503-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1892503-01 08/30/25 23:15 • (DUP) R4266655-4 08/30/25 23:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Salinity	0.100	0.0990	1	1.01		20

⁷Is

⁸Gl

⁹Al

Laboratory Control Sample (LCS)

(LCS) R4266655-2 08/30/25 23:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Salinity	35.0	36.3	104	85.0-115	

¹⁰Sc

Method Blank (MB)

(MB) R4260186-1 08/17/25 00:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Nitrate as (N)	ug/l	U	88.4	100
Sulfate	ug/l	U	637	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Is

8 Gl

9 Al

10 Sc

L1889400-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1889400-07 08/17/25 03:28 • (DUP) R4260186-3 08/17/25 03:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate as (N)	ug/l	ug/l	%	%		%
Nitrate as (N)	U	U	1	0.000		15
Sulfate	18000	19600	1	8.36		15

L1889475-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1889475-03 08/17/25 05:59 • (DUP) R4260186-6 08/17/25 06:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate as (N)	ug/l	ug/l	%	%		%
Nitrate as (N)	U	U	1	0.000		15
Sulfate	U	U	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R4260186-2 08/17/25 00:32

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Nitrate as (N)	ug/l	ug/l	%	%	
Nitrate as (N)	8000	7910	98.9	80.0-120	
Sulfate	40000	39800	99.4	80.0-120	

L1889400-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1889400-07 08/17/25 03:28 • (MS) R4260186-4 08/17/25 03:53 • (MSD) R4260186-5 08/17/25 04:06

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Nitrate as (N)	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Nitrate as (N)	8000	U	7570	7500	94.7	93.8	1	80.0-120			0.930	15
Sulfate	40000	18000	54400	54000	91.1	89.9	1	80.0-120			0.823	15

L1889475-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1889475-03 08/17/25 05:59 • (MS) R4260186-7 08/17/25 06:24

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Nitrate as (N)	8000	U	7670	95.9	1	80.0-120	
Sulfate	40000	U	38000	95.0	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Is

⁸Gl

⁹Al

¹⁰Sc

Method Blank (MB)

(MB) R4273338-1 09/15/25 10:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Manganese,Dissolved	U		0.700	5.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R4273338-2 09/15/25 10:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Manganese,Dissolved	50.0	51.3	103	80.0-120	

⁴Cn

⁵Sr

L1889475-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1889475-05 09/15/25 11:00 • (MS) R4273338-4 09/15/25 11:06 • (MSD) R4273338-5 09/15/25 11:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Manganese,Dissolved	50.0	U	49.8	51.5	99.5	103	1	75.0-125			3.45	20

⁶Qc

⁷Is

⁸Gl

⁹Al

¹⁰Sc

Method Blank (MB)

(MB) R4272113-1 09/11/25 12:47

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Manganese	U		0.700	5.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R4272113-2 09/11/25 12:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Manganese	50.0	51.3	103	80.0-120	

⁴Cn

⁵Sr

L1889475-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1889475-03 09/11/25 12:53 • (MS) R4272113-4 09/11/25 13:00 • (MSD) R4272113-5 09/11/25 13:03

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Manganese	50.0	U	49.9	50.0	99.7	100	1	75.0-125			0.337	20

⁶Qc

⁷Is

⁸Gl

⁹Al

¹⁰Sc

Method Blank (MB)

(MB) R4260536-1 08/19/25 00:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		60.5	200
Residual Range Organics (RRO)	U		77.2	250
<i>(S) o-Terphenyl</i>	81.5			52.0-156

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

(LCS) R4260536-2 08/19/25 00:41 • (LCSD) R4260536-3 08/19/25 01:01

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	1500	1450	1470	96.7	98.0	50.0-150			1.37	20
<i>(S) o-Terphenyl</i>				82.5	82.5	52.0-156				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Is

⁸ Gl

⁹ Al

¹⁰ Sc

Method Blank (MB)

(MB) R4265380-3 08/26/25 11:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0210	0.0500
Acenaphthene	U		0.0202	0.0500
Acenaphthylene	U		0.0221	0.0500
Benzo(a)anthracene	U		0.0242	0.0500
Benzo(a)pyrene	U		0.0272	0.0500
Benzo(b)fluoranthene	U		0.0253	0.0500
Benzo(g,h,i)perylene	U		0.0335	0.0500
Benzo(k)fluoranthene	U		0.0254	0.0500
Chrysene	U		0.0257	0.0500
Dibenz(a,h)anthracene	U		0.0251	0.0500
Fluoranthene	U		0.0375	0.0500
Fluorene	U		0.0212	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0270	0.0500
Naphthalene	U		0.118	0.250
Phenanthrene	U		0.0279	0.0500
Pyrene	U		0.0416	0.0500
1-Methylnaphthalene	U		0.112	0.250
2-Methylnaphthalene	U		0.117	0.250
2-Chloronaphthalene	U		0.111	0.250
(S) Nitrobenzene-d5	89.0			31.0-160
(S) 2-Fluorobiphenyl	108			48.0-148
(S) p-Terphenyl-d14	105			37.0-146



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

(LCS) R4265380-1 08/26/25 10:27 • (LCSD) R4265380-2 08/26/25 10:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	1.98	1.99	99.0	99.5	67.0-150			0.504	20
Acenaphthene	2.00	2.04	2.08	102	104	65.0-138			1.94	20
Acenaphthylene	2.00	2.03	2.09	102	104	66.0-140			2.91	20
Benzo(a)anthracene	2.00	1.93	1.97	96.5	98.5	61.0-140			2.05	20
Benzo(a)pyrene	2.00	1.91	1.90	95.5	95.0	60.0-143			0.525	20
Benzo(b)fluoranthene	2.00	2.11	2.13	105	106	58.0-141			0.943	20
Benzo(g,h,i)perylene	2.00	1.93	1.88	96.5	94.0	52.0-153			2.62	20
Benzo(k)fluoranthene	2.00	2.10	2.05	105	103	58.0-148			2.41	20
Chrysene	2.00	2.31	2.29	115	115	64.0-144			0.870	20
Dibenz(a,h)anthracene	2.00	1.99	1.96	99.5	98.0	52.0-155			1.52	20
Fluoranthene	2.00	2.13	2.16	106	108	69.0-153			1.40	20

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

(LCS) R4265380-1 08/26/25 10:27 • (LCSD) R4265380-2 08/26/25 10:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Fluorene	2.00	2.30	2.34	115	117	64.0-136			1.72	20
Indeno(1,2,3-cd)pyrene	2.00	1.76	1.72	88.0	86.0	54.0-153			2.30	20
Naphthalene	2.00	2.09	2.15	104	107	61.0-137			2.83	20
Phenanthrene	2.00	2.21	2.22	111	111	62.0-137			0.451	20
Pyrene	2.00	2.19	2.21	109	111	60.0-142			0.909	20
1-Methylnaphthalene	2.00	2.15	2.21	107	111	66.0-142			2.75	20
2-Methylnaphthalene	2.00	2.09	2.17	104	108	62.0-136			3.76	20
2-Chloronaphthalene	2.00	2.19	2.23	109	111	64.0-140			1.81	20
<i>(S) Nitrobenzene-d5</i>				89.0	92.0	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				106	113	48.0-148				
<i>(S) p-Terphenyl-d14</i>				98.5	102	37.0-146				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Is

⁸ Gl

⁹ Al

¹⁰ Sc

INTERNAL STANDARD SUMMARY

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Instrument: BNAMS17 • File ID: 0826_03

08/26/25 09:19

Sample ID	File ID	NAPHTHALENE-D8 Response	ACENAPHTHENE-D10 Response	PHENANTHRENE-D10 Response	CHRYSENE-D12 Response	PERYLENE-D12 Response
Standard	0826_03	61536	30500	53131	46053	37130
Upper Limit		123072	61000	106262	92106	74260
Lower Limit		30768	15250	26566	23027	18565
LCS R4265380-1 WG2583351 1x	0826_05	56320	27140	45816	38415	31171
LCSD R4265380-2 WG2583351 1x	0826_06	55179	26839	46197	38895	30912
BLANK R4265380-3 WG2583351 1x	0826_07	54863	26823	45401	36404	28437
L1889400-01 WG2583351 1x	0826_08	57653	27878	47552	39211	30677
L1889400-02 WG2583351 1x	0826_09	56325	27433	46697	38393	30926
L1889400-03 WG2583351 2x	0826_10	55908	27182	45841	36774	29080
L1889400-04 WG2583351 2x	0826_11	54146	26065	43391	35449	28590

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Is

8 Gl

9 Al

10 Sc

Instrument: BNAMS17 • File ID: 0826A_03

08/27/25 18:41

Sample ID	File ID	NAPHTHALENE-D8 Response	ACENAPHTHENE-D10 Response	PHENANTHRENE-D10 Response	CHRYSENE-D12 Response	PERYLENE-D12 Response
Standard	0826A_03	64756	32385	55035	47750	39653
Upper Limit		129512	64770	110070	95500	79306
Lower Limit		32378	16193	27518	23875	19827
L1889400-05 WG2583351 2x	0827_25	59629	30440	53551	47238	47954
L1889400-06 WG2583351 2x	0827_26	58981	29869	52141	45099	43843
L1889400-07 WG2583351 1x	0827_27	57330	28991	49545	42787	39685
L1889400-08 WG2583351 2x	0827_28	58475	29263	50242	42136	38069

GLOSSARY OF TERMS

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.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
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.
U (Radiochemistry)	Result + Error < MDA.
J (Radiochemistry)	Result < MDA; Result + Error > MDA.
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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



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	LA000356
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.



Kennedy/Jenks Con-BNSF Region 1

320001 32nd Ave South
Suite 300
Federal Wav. WA 98001

Report to:
Noah Butzine 253-835-6430

Accounts Payable
421 SW 6th Ave, Suite 1000
Portland, OR 97204

Pres
Chk

Email To:
NoahButzine@kennedyjenks.com;SpenserKuhn

Project Description:
BNSF - Tacoma Thea Foss D Street

City/State
Collected: Tacoma, WA

Please Circle:
 PT MT CT ET

Regulatory Program(DOD,RCRA,DW,etc):

Client Project #
2596139*00

Lab Project #
BNSF1KEN-TACOMA

Collected by (print):
Robert Anderson

Site/Facility ID #

P.O. #

Collected by (signature):
Robert Anderson

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day STD TAT

Quote #

Date Results Needed

Immediately
Packed on Ice N Y

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK,NITRATE,SULFATE 125mHDPE-NoPres	Diss-MN 6020 250mHDPE-NoPres	NWTPHDXLVI w/SGT 40mlAmb-HCl-BT	PAHSIMLVI 40mlAmb-NoPres-WT	Salinity 125mHDPE-NoPres	Total-MN 6020 250mHDPE-HNO3
MW-2(20250815)	grab	GW	-	8/15/2025	1125	7	X	X	X	X	X	X
MW-3(20250815)	grab	GW	-	8/15/2025	1225	7	X	X	X	X	X	X
MW-4(20250815)	grab	GW	-	8/15/2025	1330	7	X	X	X	X	X	X
MW-5(20250815)	grab	GW	-	8/15/2025	1420	7	X	X	X	X	X	X
MW-11(20250815)	grab	GW	-	8/15/2025	1500	7	X	X	X	X	X	X
MW-8(20250815)	grab	GW	-	8/15/2025	1530	7	X	X	X	X	X	X
MW-9(20250815)	grab	GW	-	8/15/2025	1605	7	X	X	X	X	X	X
DUP-01-20250815	grab	GW	-	8/15/2025	0800	7	X	X	X	X	X	X
		GW										

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd. Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **L18891400**
G178

Acctnum: **BNSF1KEN**
Template: **T277901**
Prelogin: **P1168224**
PM: **4089 - Andi R Jones**
PB:

Shipped Via: **FedEX Ground**

Remarks | Sample # (lab only)

- * Matrix:
- SS - Soil AIR - Air F - Filter
- GW - Groundwater B - Bioassay
- WW - WasteWater
- DW - Drinking Water
- OT - Other

Remarks: Diss Mn field filtered

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist	
COC Seal Present/Intact:	NP <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input type="checkbox"/> Y <input type="checkbox"/> N
If Applicable	
VOA Zero Headspace:	<input type="checkbox"/> Y <input type="checkbox"/> N
Preservation Correct/Checked:	<input type="checkbox"/> Y <input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Samples returned via:
 UPS FedEx Courier

Tracking # 4580 0320 7527

Relinquished by: (Signature)
Noah Butzine

Date: 8/15/25
Time: 11740

Received by: (Signature)

Trip Blank Received: Yes / No
3 HCL / MeOH TBR

Relinquished by: (Signature)

Date: _____ Time: _____

Received by: (Signature)

Temp: _____ °C Bottles Received:
CRAP 1.2-0.1=1.1 50

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: _____ Time: _____

Received for lab by: (Signature)
Sabir Khan

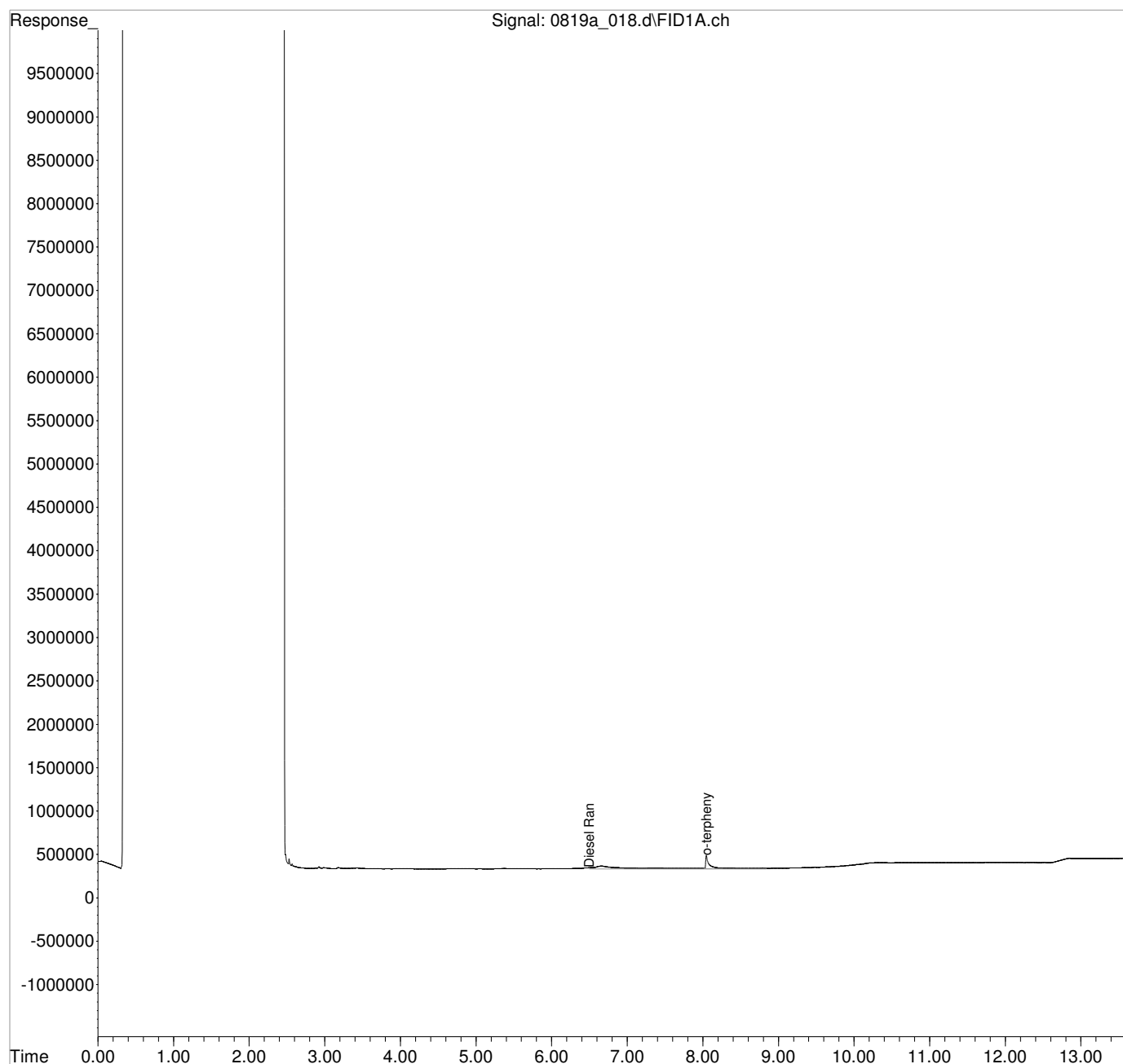
Date: 8/15/25 Time: 9:00

Hold: _____ Condition: NCF / OK

Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_018.d
Signal(s) : FID1A.ch
Acq On : 19 Aug 2025 11:45 pm
Operator : 4346
Sample : L1889400-01 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:53:55 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

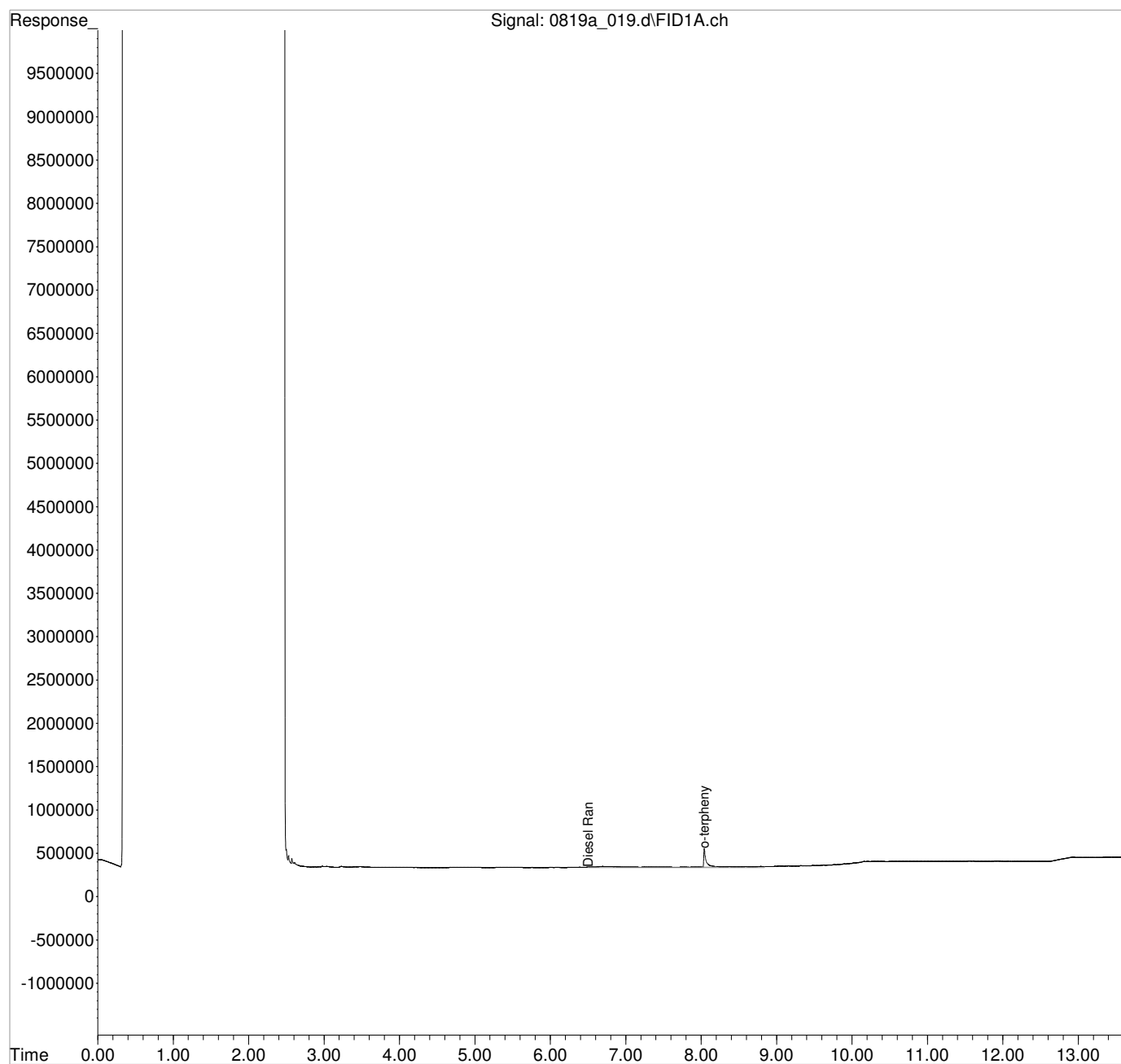
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_019.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 12:05 am
Operator : 4346
Sample : L1889400-02 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:54:45 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

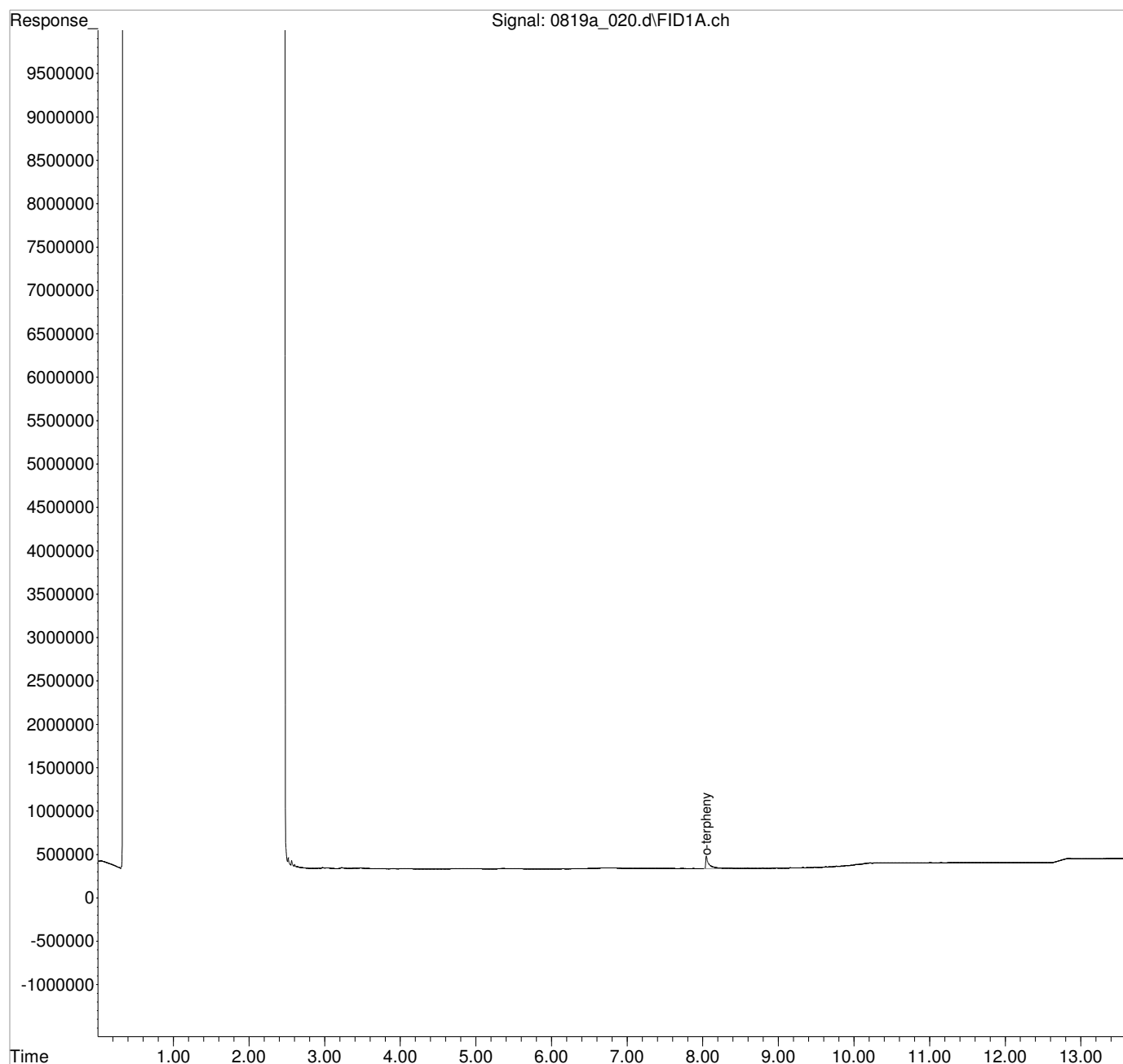
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_020.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 12:25 am
Operator : 4346
Sample : L1889400-03 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:55:31 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

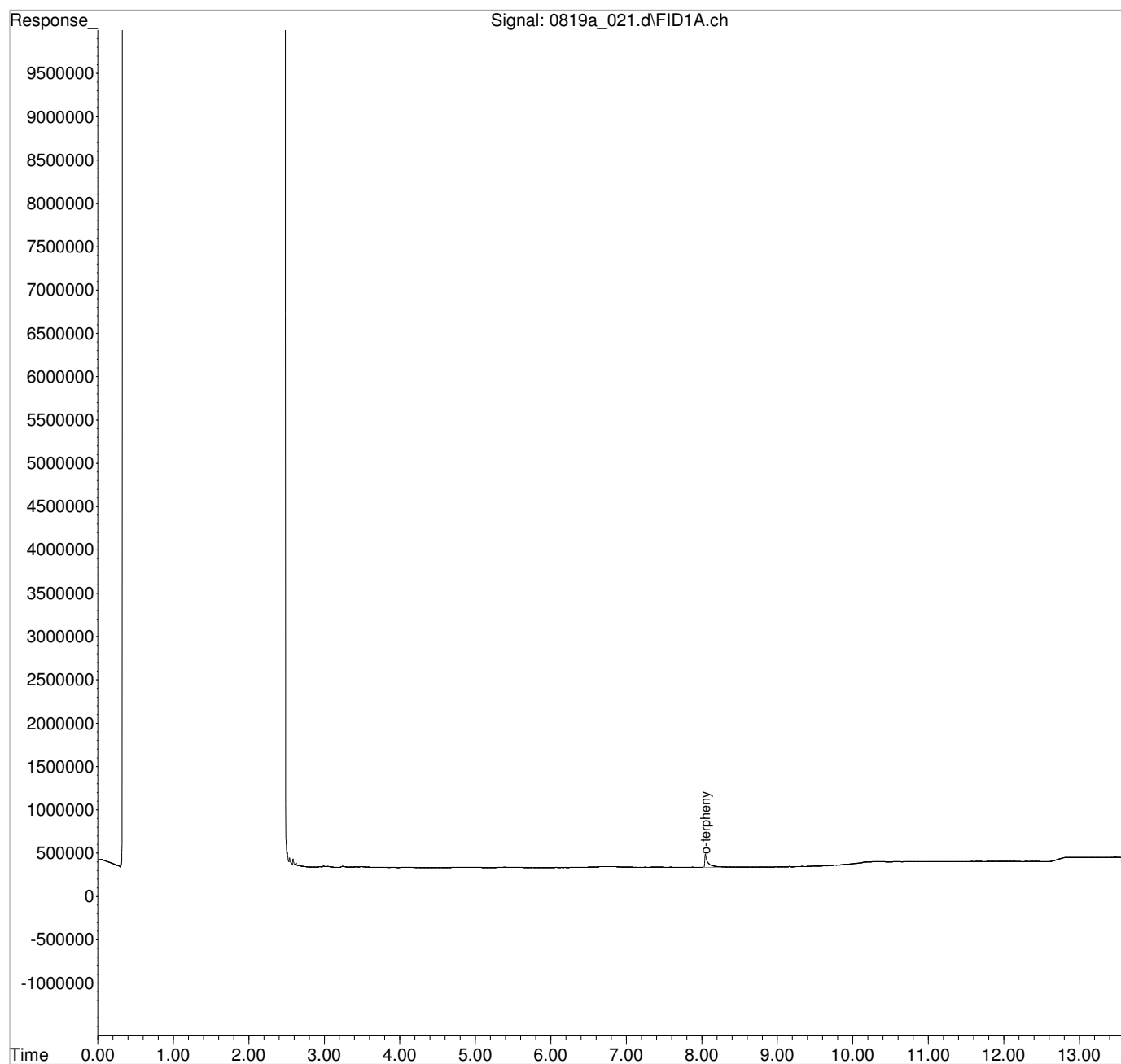
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_021.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 12:45 am
Operator : 4346
Sample : L1889400-04 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:56:17 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

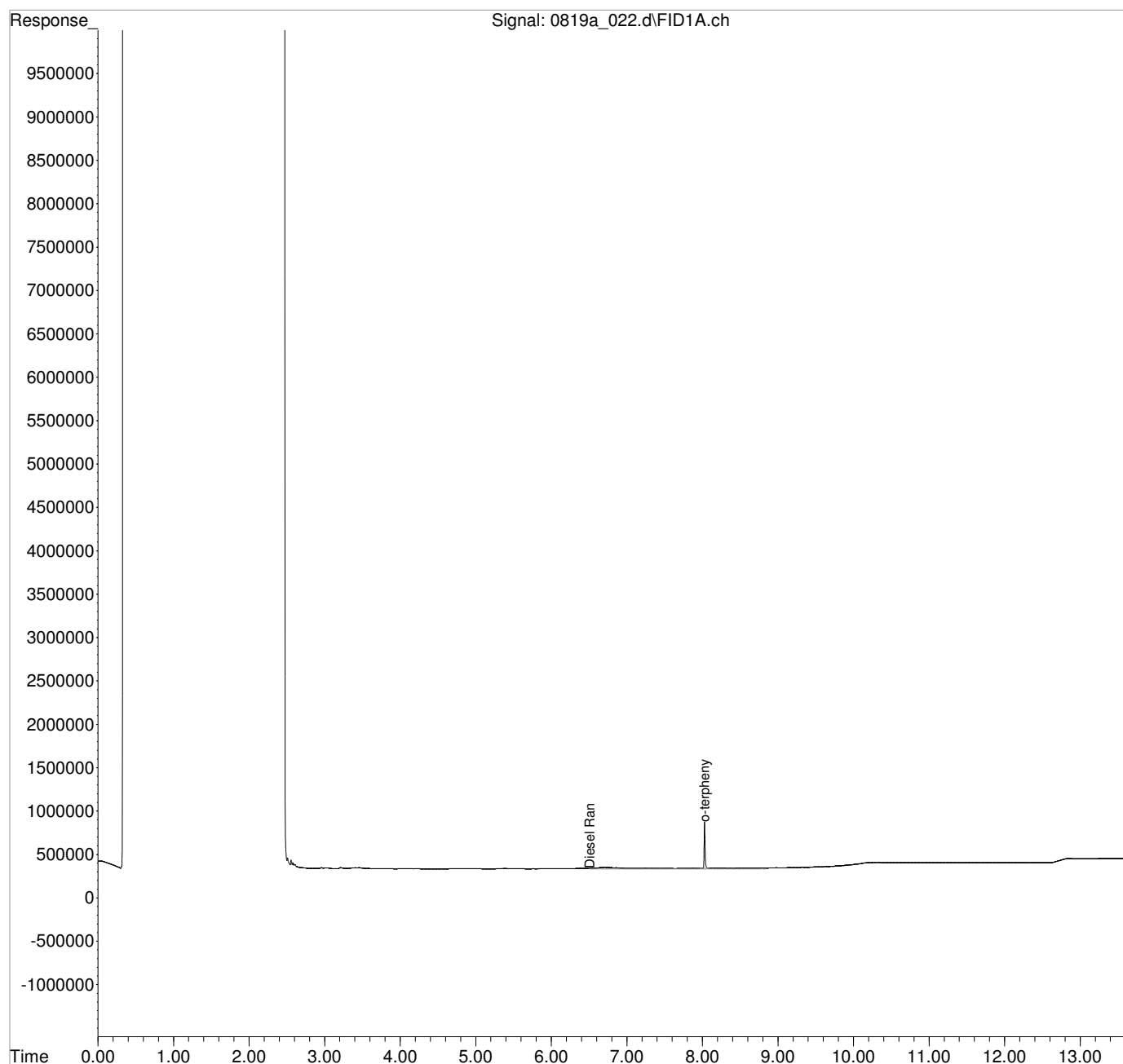
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_022.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 1:06 am
Operator : 4346
Sample : L1889400-05 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:56:40 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

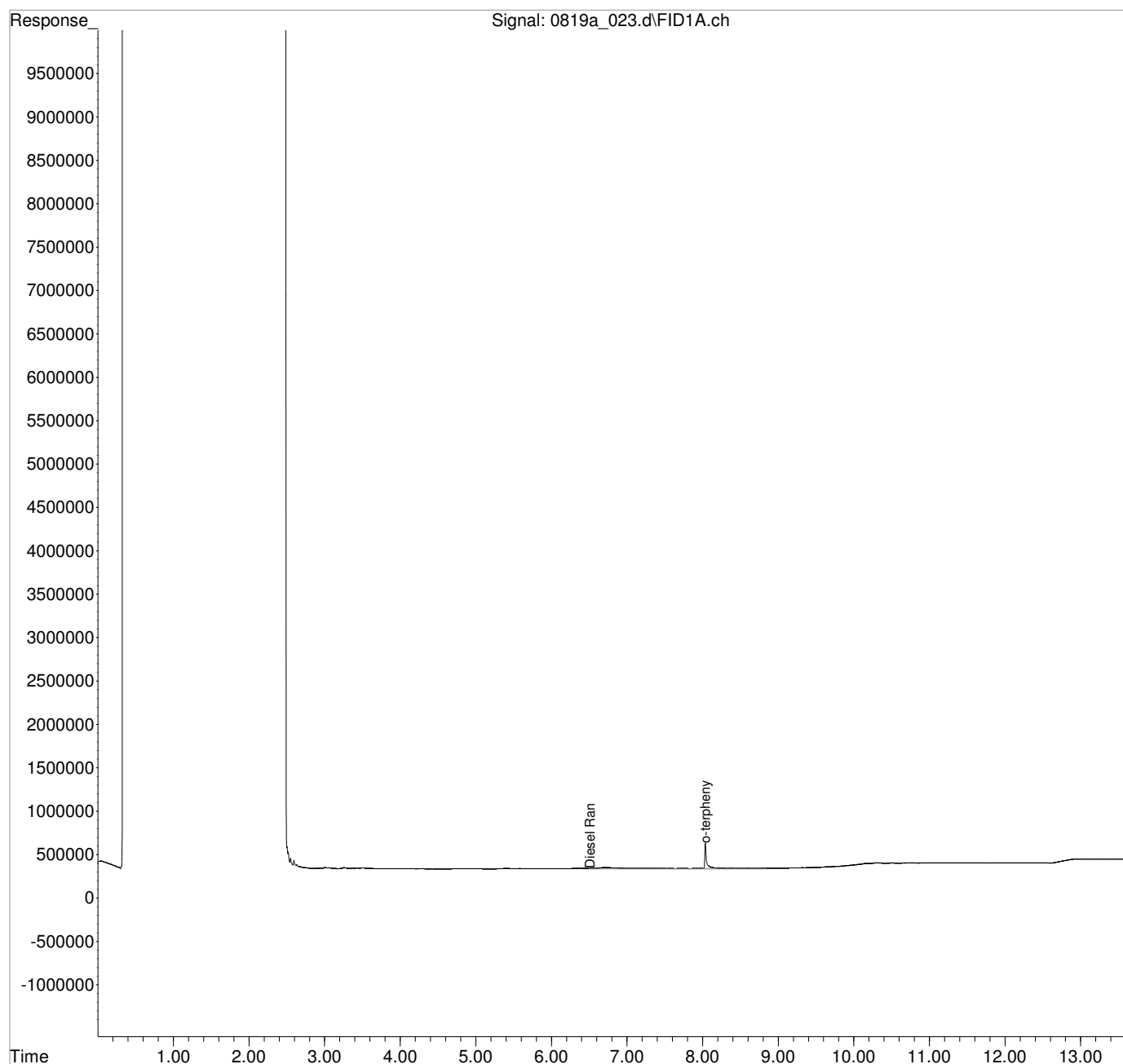
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_023.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 1:26 am
Operator : 4346
Sample : L1889400-06 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:57:14 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

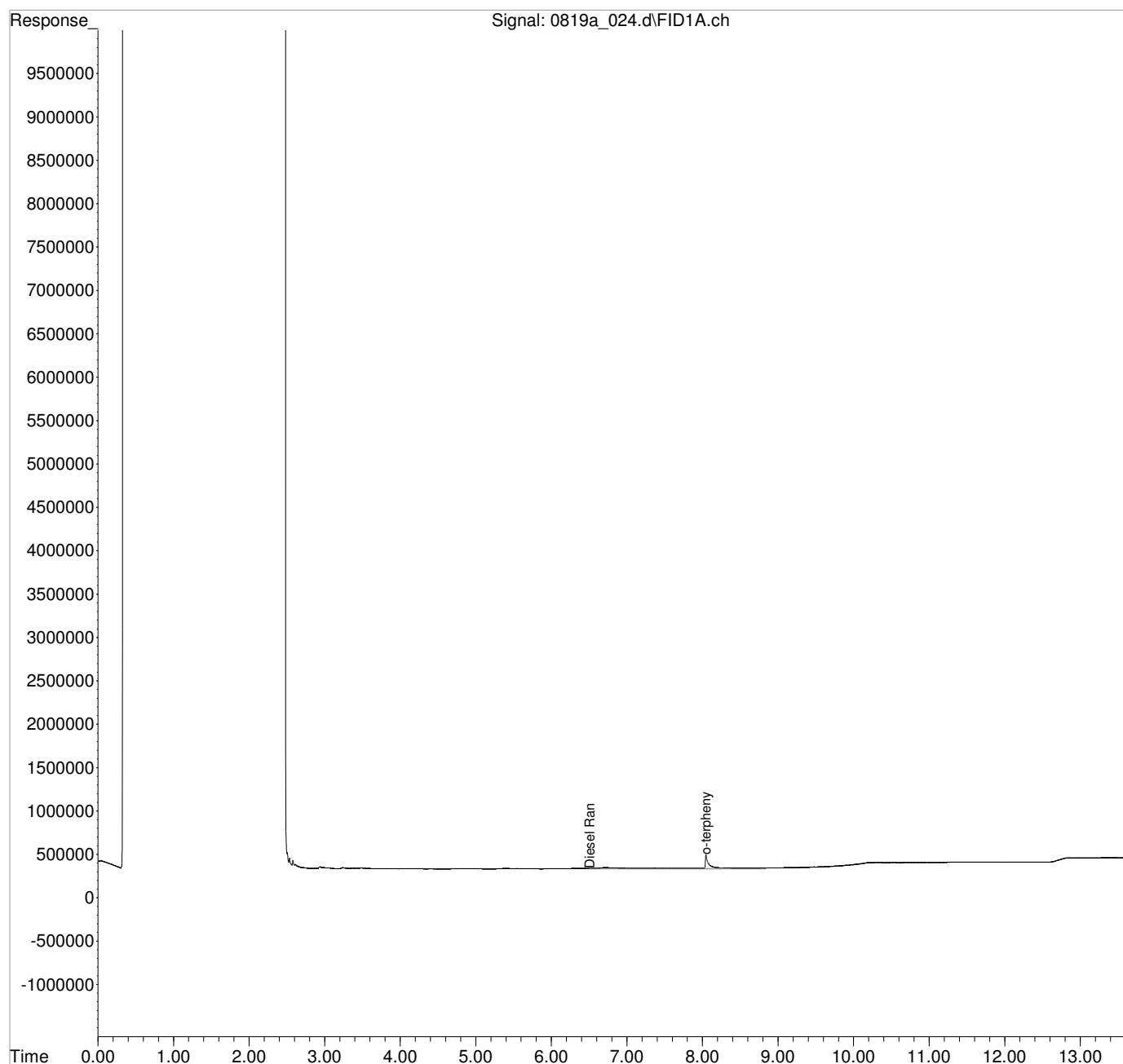
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_024.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 1:46 am
Operator : 4346
Sample : L1889400-07 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:57:59 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

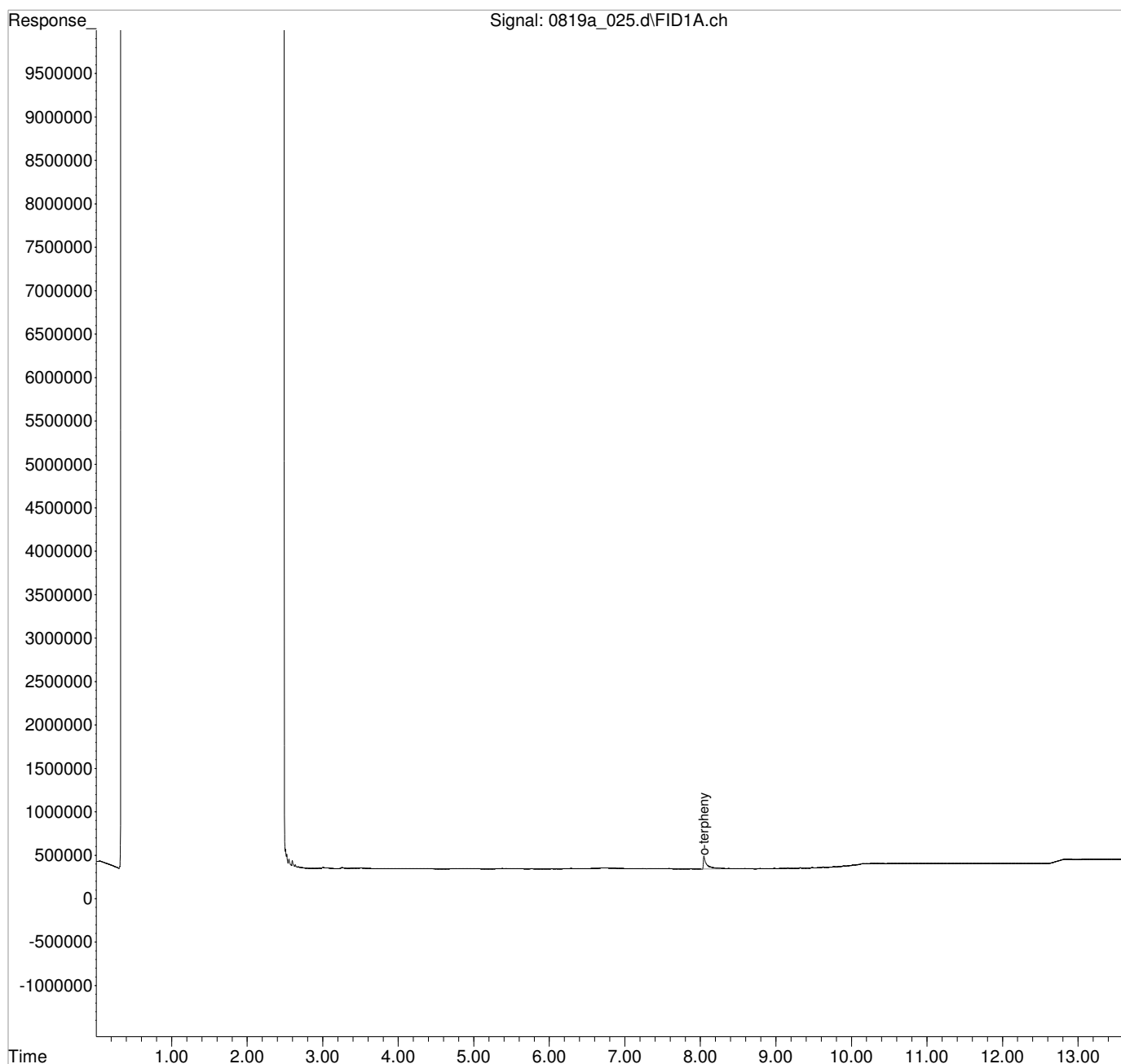
Volume Inj. :
Signal Phase :
Signal Info :



Data Path : C:\msdchem\1\data\081925A\
Data File : 0819a_025.d
Signal(s) : FID1A.ch
Acq On : 20 Aug 2025 2:06 am
Operator : 4346
Sample : L1889400-08 1X WG2581595
Misc : M.I.s on ranges are corrections
ALS Vial : 18 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 20 10:59:13 2025
Quant Method : C:\msdchem\1\methods\DM26H19AY.M
Quant Title :
QLast Update : Tue Aug 19 23:24:26 2025
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Attachment C

Data Quality Assessment Summary

Data Validation Report

Site/Facility Name: Tacoma Thea Foss D Street
Laboratory Sample Delivery Group: L1889400
Laboratory Report Date: 2025-09-15
Date Validated: 2025-10-08
Laboratory Name: Pace Analytical Services, Mt. Juliet, TN
Laboratory Location: Mt. Juliet, TN

Table 1. Data Validation Summary

Quality Control Element	Item Checked?	Issue Noted?	Data Qualified?
Chain of Custody	X		
Sample Preservation	X	X	X
Holding Time	X		
Method Blanks	X		
Trip Blanks	NA		
Laboratory Control Samples	X		
Matrix Spikes	X		
Surrogate Recovery	X		
Laboratory Duplicates	X		
Field Blank Samples	NA		
Field Duplicate Samples	X		
Chromatograms Provided	X		
Dissolved Metals Field Filtered	X	X	X
Other Issues or Information	X		

Data Validation Details

Sample Preservation

The Laboratory Report Noted:
 Sample bottles for Alkalinity by method SM2320B-2011 for MW-2(20250815), MW-3(20250815), MW-34(20250815), MW-5(20250815), MW-11(20250815), MW-8(20250815), MW-9(20250815), and Dup-01-20250815 were received with headspace. Associated sample results were detected, qualified as estimated, J-.

Trip Blanks

Trip blanks were not collected or associated with this sample delivery group.

Field Blank Samples

Field blanks were not collected or associated with this sample delivery group.

Field Duplicate Samples

The RPDs for the duplicate pair MW-5(20250815) and DUP-01-20250815 ranged from 0-9.67%. The RPDs were within the data validation acceptance criteria of 20%, no action taken.

Dissolved Metals Field Filtered

Yes. Per COC. The unpreserved containers for dissolved metals for samples MW-2(20250815), MW-3(20250815), MW-4(20250815), MW-5(20250815), MW-11(20250815), MW-8(20250815), MW-9(20250815), and DUP-01-20250815 were filtered in the field. The laboratory noted there were no comments on the container to indicate to the lab that the sample was field filtered therefore the laboratory also filtering the samples with a 0.45 micron filter. Associated sample results for Manganese, Dissolved were detected, qualified as estimated, J- due to potential impact of the method deviation of filtering the samples twice.

Data Usability Statement:

Based on the data validation review, the data are acceptable as delivered. The findings with respect to the quality assurance/quality control (QA/QC) data identified in this report do not adversely affect the use of the analytical results.

Table 2. Description of samples

Sample ID	Sample Date	Lab Sample ID	Sample Type	Matrix	NWTPHDX-SG	SM2320B	SM2520B	SW6020B	SW8270ESIM	SW9056A
DUP-01-20250815	2025-08-15	L1889400-08	FD	WG	X	X	X	X	X	X
MW-11(20250815)	2025-08-15	L1889400-05	N	WG	X	X	X	X	X	X
MW-2(20250815)	2025-08-15	L1889400-01	N	WG	X	X	X	X	X	X
MW-3(20250815)	2025-08-15	L1889400-02	N	WG	X	X	X	X	X	X
MW-4(20250815)	2025-08-15	L1889400-03	N	WG	X	X	X	X	X	X
MW-5(20250815)	2025-08-15	L1889400-04	N	WG	X	X	X	X	X	X
MW-8(20250815)	2025-08-15	L1889400-06	N	WG	X	X	X	X	X	X
MW-9(20250815)	2025-08-15	L1889400-07	N	WG	X	X	X	X	X	X

Table 3. Parent sample identification

Sample ID	Parent Sample ID	Sample Type
DUP-01-20250815	MW-5(20250815)	FD
R4260186-4 MS	MW-9(20250815)	MS
R4260186-5 MSD	MW-9(20250815)	MSD

Table 4. Data that have been qualified are listed below.

Sample ID	Lab Sample ID	Analytic Method	CasRN	Parameter Name	Validated Result	Unit	Validator Reason
DUP-01-20250815	L1889400-08	SM2320B	ALK	Alkalinity, total (as CaCO3)	296000 J-	ug/l	J- due to headspace
DUP-01-20250815	L1889400-08	SW6020B	7439-96-5	Manganese, Dissolved	2400 J-	ug/l	J- due to double filtration
MW-11(20250815)	L1889400-05	SM2320B	ALK	Alkalinity, total (as CaCO3)	406000 J-	ug/l	J- due to headspace
MW-11(20250815)	L1889400-05	SW6020B	7439-96-5	Manganese, Dissolved	660 J-	ug/l	J- due to double filtration
MW-2(20250815)	L1889400-01	SM2320B	ALK	Alkalinity, total (as CaCO3)	265000 J-	ug/l	J- due to headspace
MW-2(20250815)	L1889400-01	SW6020B	7439-96-5	Manganese, Dissolved	811 J-	ug/l	J- due to double filtration
MW-3(20250815)	L1889400-02	SM2320B	ALK	Alkalinity, total (as CaCO3)	252000 J-	ug/l	J- due to headspace
MW-3(20250815)	L1889400-02	SW6020B	7439-96-5	Manganese, Dissolved	877 J-	ug/l	J- due to double filtration
MW-4(20250815)	L1889400-03	SM2320B	ALK	Alkalinity, total (as CaCO3)	335000 J-	ug/l	J- due to headspace
MW-4(20250815)	L1889400-03	SW6020B	7439-96-5	Manganese, Dissolved	2230 J-	ug/l	J- due to double filtration
MW-5(20250815)	L1889400-04	SM2320B	ALK	Alkalinity, total (as CaCO3)	297000 J-	ug/l	J- due to headspace
MW-5(20250815)	L1889400-04	SW6020B	7439-96-5	Manganese, Dissolved	2250 J-	ug/l	J- due to double filtration
MW-8(20250815)	L1889400-06	SM2320B	ALK	Alkalinity, total (as CaCO3)	314000 J-	ug/l	J- due to headspace
MW-8(20250815)	L1889400-06	SW6020B	7439-96-5	Manganese, Dissolved	260 J-	ug/l	J- due to double filtration
MW-9(20250815)	L1889400-07	SM2320B	ALK	Alkalinity, total (as CaCO3)	298000 J-	ug/l	J- due to headspace
MW-9(20250815)	L1889400-07	SW6020B	7439-96-5	Manganese, Dissolved	177 J-	ug/l	J- due to double filtration

Abbreviations

- FD Field Duplicate Sample
- J- An estimated concentration that may be biased low based on data validation findings.
- MS Project Specific Matrix Spike
- MSD Project Specific Matrix Spike Duplicate considered as same as spike
- N Normal Environmental Sample
- NA Not Applicable
- ug/l micrograms per liter
- WG Ground Water
- X Item checked