



2753 West 31st Street | Chicago, IL 60608
Tel: 773-722-9200 | Fax: 773-722-9201 | pioneerEES.com

Transmitted via Electronic Mail

February 25, 2026

Ms. Tena Seeds
Washington State Department of Ecology
Toxics Cleanup Program
15700 Dayton Ave N., Shoreline, WA 98133

RE: Long-Term Compliance Monitoring Annual Report
Time Oil Bulk Terminal Site, Facility Site ID #75486194 and Cleanup Site ID #14604
Prospective Purchaser Consent Decree No. 20-2-15215-3 SEA

Dear Ms. Seeds:

As required by Prospective Purchaser Consent Decree (PPCD No. 20-2-15215-3 SEA), Pioneer Engineering & Environmental Services, LLC on behalf of TOC Seattle Terminal 1, LLC submits the attached Long-Term Compliance Monitoring Annual Report for the Time Oil Bulk Terminal Site for the 2025 reporting period.

If you have any questions about this report, please contact me at 773-435-3725.

Sincerely,

A handwritten signature in black ink that reads "Kim Hempel". The signature is written in a cursive, flowing style.

Kim Hempel
Project Coordinator
Pioneer Engineering & Environmental Services, LLC

Distribution List:
Doug Ciserella and Mike Ciserella, TOC Seattle Terminal 1, LLC
Alexandra Kleeman, Hillis Clark Martin & Peterson P.S.
Jamie Stevens, CRETE Consulting
Kristin Anderson, Floyd|Snider

**TIME OIL BULK TERMINAL SITE
PROSPECTIVE PURCHASER CONSENT DECREE NO. 20-2-15215-3 SEA
LONG-TERM COMPLIANCE MONITORING ANNUAL REPORT**

This Long-Term Compliance Monitoring Annual Report has been prepared to document the post-remedial construction compliance monitoring items detailed in Section 3 of the Long-Term Compliance Monitoring Plan (LTCMP¹) for the Time Oil Bulk Terminal Site (Site) for the 2025 reporting period. The LTCMP includes a Groundwater Monitoring Plan (GMP), a Soil and Remedial Element Management Plan (SREMP) and a Vapor Intrusion Assessment and Mitigation Plan (VI Plan). Activities performed in 2025 in accordance with each of these plans are described below.

Summary of Monitoring Activities Performed per the GMP

- The 2025 Groundwater Monitoring Annual Report includes the following required LTCMP items:
 - Monitoring well network updates
 - Summary of quarterly short-term groundwater monitoring activities, data collected, and results
 - Assessment of Compliance with Groundwater Cleanup Standards
 - Indications of Organic Contaminant Degradation
 - Groundwater Flow Patterns
 - Recommendations for Updates to Monitoring Locations or Frequency

Refer to the 2025 Groundwater Monitoring Annual Report included as Appendix A for a summary of activities and data collected.

Summary of Assessment or Mitigation Activities Performed per the VI Plan

- Construction of the 165,000 sf² self-storage building on Lot F (2707 West Commodore Way) was completed in May 2025. This work was completed by Insite Property Group, the property owner of Lot F.
- Vapor intrusion (VI) sampling was performed by CRETE Consulting Inc. (CRETE) on June 4, 2025, and results were subsequently shared with Ecology on June 27, 2025.
- Per correspondence with Ecology, a VI re-sampling event is necessary to confirm contaminant concentrations during the HVAC heating season.
- No buildings are present on the remaining portions of the site owned by TOC Seattle Terminal 1, LLC; therefore, vapor barriers were not installed and vapor intrusion monitoring was not performed in these areas of the site.

Refer to the 2025 Vapor Intrusion technical memorandum included as Appendix B for a summary of activities and data collected.

Summary of Inspection and Maintenance Activities Performed per the SREMP

- As mentioned above, construction on Lot F, the eastern lot on the Bulk Terminal parcel, was completed in May 2025. The boundaries of Lot F are depicted on Figure A.1 in Appendix A. Routine inspections of Lot F will begin 2 years after development, beginning in June 2027.
- Aside from Lot F, the site remains undeveloped and routine inspections have not yet been triggered per Section 7 of the SREMP. Visual checks of the property were completed on February 13, March 4, June 3, June 5, August 13, September 16, and December 3, 2025. The perimeter fencing has been maintained during the reporting period, which limits site access to authorized personnel only. Interim caps/surfaces installed during the remedial action have been observed during groundwater monitoring events and construction oversight with no significant degradation or changes noted, with the exception of a few areas

¹ Long-Term Compliance Monitoring Plan, Prepared by CRETE Consulting, February 10, 2023.

on the Swell Management Area (SMA) where the geotextile fabric was no longer secured due to high winds. The geotextile fabric on the SMA was re-secured on February 13, 2025, and June 3, 2025.

Anticipated 2026 Activities

- VI re-sampling will be conducted in February 2026 in accordance with the Vapor Intrusion Assessment and Mitigation Plan (Appendix C of the LTCMP). Results of the vapor re-sampling will be provided to Ecology in the quarterly progress report following the sampling event and will be summarized in the 2026 Long-Term Compliance Monitoring Annual Report.
- Redevelopment of Lots A through E, and Lot G may begin in late 2026 and will continue into 2027. Proposed work includes demolition of remnant concrete foundations, installation of additional shoring (soldier pile and/or ecology blocks) along portions of the north and south property lines of the remainder of the Bulk Terminal parcel and the ASKO parcel, site grading, installation of stormwater detention facility, construction of three one-story buildings totaling approximately 71,500 square feet for proposed use as garage condominiums, and installation of the required cap. No other property modifications are currently anticipated in 2026.
- Quarterly groundwater monitoring will continue as described in Appendix A.
- Quarterly progress reports will provide Ecology with periodic updates regarding redevelopment plans and other Site activities.
- The next Long-Term Compliance Monitoring Annual Report will be submitted on or by March 1, 2027.

Appendices

- Appendix A – Groundwater Monitoring Annual Report
- Appendix B – 2025 Vapor Intrusion Technical Memorandum

END LONG-TERM COMPLIANCE MONITORING ANNUAL REPORT

Long-Term Compliance Monitoring

Time Oil Bulk Terminal

Appendix A 2025 Groundwater Monitoring Annual Report

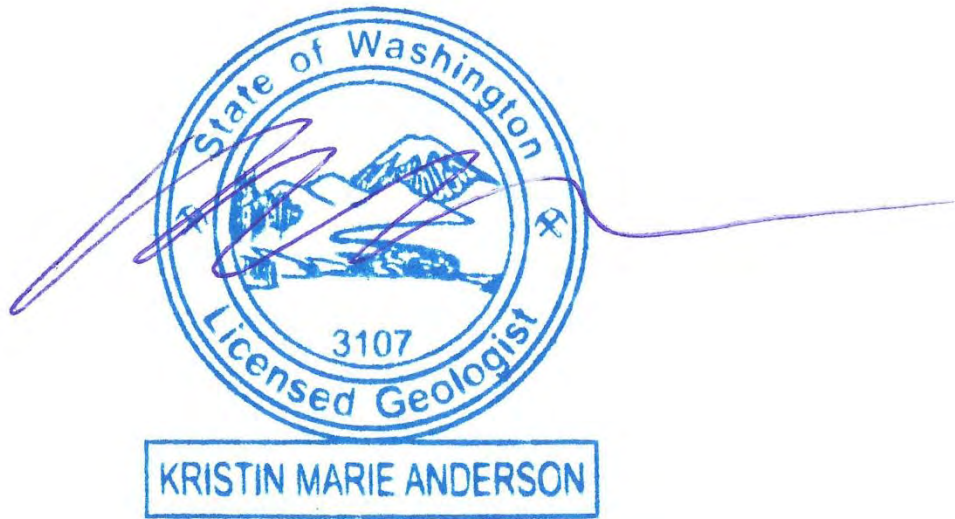
LIMITATIONS

This report has been prepared for the exclusive use of TOC Seattle Terminal 1, LLC, their authorized agents, and regulatory agencies. It has been prepared following the described methods and information available at the time of the work. No other party should use this report for any purpose other than that originally intended, unless Floyd|Snider agrees in advance to such reliance in writing. The information contained herein should not be utilized for any purpose or project except the one originally intended. Under no circumstances shall this document be altered, updated, or revised without written authorization of Floyd|Snider.

The interpretations and conclusions contained in this report are based in part on previous site characterization data collected by others and Floyd|Snider cannot assure the accuracy of this information.

**Long-Term Compliance Monitoring Annual Report
Appendix A: 2025 Groundwater Monitoring Annual Report**

This document was prepared for
TOC Seattle Terminal 1, LLC
under the supervision of:



Name: Kristin Anderson
Date: 4/24/2026

Table of Contents

1.0 Introduction A-1

1.1 CLEANUP ACTION SUMMARY A-1

1.2 PROPERTY REDEVELOPMENT STATUS A-3

2.0 Monitoring Well Network Updates A-5

3.0 Short-Term Performance Monitoring Activities A-7

3.1 GROUNDWATER FLOW PATTERN ANALYSIS..... A-7

3.2 BULK TERMINAL GROUNDWATER MONITORING..... A-8

3.3 ASKO GROUNDWATER MONITORING A-9

3.4 CONTINGENCY ACTIONS AND GROUNDWATER MONITORING PLAN
DEVIATIONS A-10

3.4.1 2025 Contingency Sampling..... A-11

3.4.2 Contingency Actions A-11

3.4.3 Groundwater Monitoring Plan Deviations..... A-11

3.5 DATA VALIDATION A-11

4.0 Year 3 Data Evaluation and Performance Summary A-13

4.1 COMPLIANCE WITH CLEANUP STANDARDS..... A-13

4.1.1 Bulk Terminal A-13

4.1.2 ASKO Hydraulic A-13

4.2 ASSESSMENT OF NATURAL ATTENUATION A-14

4.2.1 Bulk Terminal A-14

4.2.2 ASKO Hydraulic A-15

5.0 Upgradient Groundwater Quality Evaluation A-17

5.1 OPERATION AND MAINTENANCE SAMPLING..... A-17

5.2 BNSF RAILWAY COMPANY GROUNDWATER MONITORING RESULTS A-18

6.0 Long-Term Compliance Monitoring Activities..... A-21

6.1 EAST WATERFRONT GROUNDWATER MONITORING A-21

6.2 ASSESSMENT OF NATURAL ATTENUATION A-21

6.3 DATA VALIDATION A-22

7.0 Recommended Groundwater Monitoring Updates..... A-23

7.1 SITE-WIDE GROUNDWATER FLOW PATTERNS A-23

7.2 BULK TERMINAL..... A-23

7.3 ASKO HYDRAULIC..... A-23

7.4 EAST WATERFRONT A-24

7.5 CONTINGENCY ACTION EVALUATION..... A-24

7.6 SCHEDULE AND REPORTING A-25

8.0 References A-27

List of Tables

Table A.1 2025 Monitoring Well Network Summary

Table A.2 Water Level Elevations (2024–2025)

Table A.3 2025 Short-Term Performance Monitoring Summary

Table A.4 Short-Term Performance Monitoring Results

Table A.5 PRB Vaults and Gravity Well Grab Sample Results

Table A.6 2025 Long-Term Compliance Monitoring Summary

Table A.7 Long-Term Compliance Monitoring Results

List of Figures

Figure A.1 Site Features and Monitoring Well Status Summary

Figure A.2 2025 Short-Term Performance Monitoring Locations

Figure A.3 2025 Long-Term Compliance Monitoring Locations

Figure A.4a Shallow WBZ Groundwater Elevations—March 2025

Figure A.4b Shallow WBZ Groundwater Elevations—September 2025

Figure A.5 2025 IHS Analytical Results: Gasoline-Range Organics

Figure A.6 2025 IHS Analytical Results: Total Diesel-Range and Oil-Range Organics

Figure A.7 2025 IHS Analytical Results: Trichloroethene and Vinyl Chloride

Figure A.8 2025 IHS Analytical Results: Benzene

Figure A.9 Monitoring Locations and Proposed Monitoring Well Network Updates for 2026

List of Attachments

Attachment A.1	Well Logs
Attachment A.2	Laboratory Reports
Attachment A.3	Data Validation Summaries
Attachment A.4	Time Concentration and Molar Analysis Plots
Attachment A.5	Updated Monitoring Well Sampling and Analytical Schedule
Attachment A.6	Decision Framework for Performance Monitoring Well Decommissioning

List of Abbreviations

Abbreviation	Definition
AOC	Area of Concern
ASKO	ASKO Hydraulic
bgs	Below ground surface
BNSF	BNSF Railway Company
CAA	Cleanup action area
CAP	Cleanup Action Plan
CPOC	Conditional point of compliance
CUL	Cleanup level
CVOC	Chlorinated volatile organic compound
DCE	<i>cis</i> -1,2-Dichloroethene
DO	Dissolved oxygen
DRO	Diesel-range organics
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
GMAR	Groundwater Monitoring Annual Report
GMP	Groundwater Monitoring Plan
GRO	Gasoline-range organics
IHS	Indicator hazardous substance
ISS	In situ solidification and stabilization
LNAPL	Light non-aqueous phase liquid

Abbreviation	Definition
LTCMP	Long-Term Compliance Monitoring Plan
µg/L	Micrograms per liter
mg/L	Milligrams per liter
MNA	Monitored natural attenuation
O&M	Operation and maintenance
ORC-A	Oxygen Release Compound Advanced
ORO	Oil-range organics
ORP	Oxidation–reduction potential
penta	Pentachlorophenol
POC	Point of compliance
PRB	Permeable reactive barrier
Property	The four parcels identified as “Bulk Terminal,” “ASKO,” “East Waterfront,” and “West Waterfront”
Regenesis	Regenesis Remediation Services
REL	Remediation level
ROW	Right-of-way
Site	Time Oil Bulk Terminal Site
TCE	Trichloroethene
TOCST	TOC Seattle Terminal 1, LLC
TPH	Total petroleum hydrocarbons
VC	Vinyl chloride
WBZ	Water-bearing zone
ZVI	Zero-valent iron

1.0 Introduction

This Groundwater Monitoring Annual Report (GMAR) was prepared at the request of TOC Seattle Terminal 1, LLC (TOCST) to fulfill requirements of the Prospective Purchaser Consent Decree (No 20-2-15215-3 SEA). The GMAR presents the results of post-cleanup action groundwater monitoring completed in 2025 in accordance with the Groundwater Monitoring Plan (GMP; Floyd|Snider 2023), which was presented as Appendix A to the Long-Term Compliance Monitoring Plan (LTCMP; Crete 2023) for the Time Oil Bulk Terminal Site (Site). The LTCMP for the Site was approved by the Washington State Department of Ecology (Ecology) in a letter dated February 14, 2023. This GMAR is presented as an appendix to the Long-Term Compliance Monitoring Annual Report for the Site.

The Site refers to the location of the former Time Oil Company Seattle Terminal facility located on W. Commodore Way in Seattle, Washington. For the purposes of this document, the Property is defined as the four separate upland parcels within the Site commonly identified as the Bulk Terminal, ASKO Hydraulic (ASKO), East Waterfront, and West Waterfront. A cleanup action was performed in 2021 in accordance with the Cleanup Action Plan (CAP; Ecology 2020) for the Site.

This GMAR provides an evaluation of compliance with Site groundwater cleanup levels (CULs) for indicator hazardous substances (IHSs; arsenic, gasoline-range organics [GRO], total diesel-range organics [DRO] and oil-range organics [ORO], benzene, trichloroethene [TCE], vinyl chloride (VC), and pentachlorophenol [penta]) specified in the CAP at the applicable point of compliance (POC). Cleanup standards are defined as a CUL combined with a POC where the CUL applies. A conditional POC (CPOC) was established at the downgradient edge of the Upland Area of Concern (AOC) and within the W. Commodore Way right-of-way (ROW), as shown on Figure A.1.

1.1 CLEANUP ACTION SUMMARY

Remedial action construction was completed at the Site between July and December 2021 and included removal or in situ solidification and stabilization (ISS) of contaminated soil acting as a source of IHSs to groundwater in designated cleanup action areas (CAAs) and focused in situ groundwater treatment as shown on Figure A.1. Those activities, which are documented in the Remedial Action Completion Report Phase 1 (Crete 2022), were designed to remove source soil contributing to groundwater contamination in three water-bearing zones (WBZs) at the Site, including a perched WBZ (encountered only on ASKO and the upgradient BNSF Railway Company [BNSF] parcel), shallow WBZ, and intermediate WBZ.

The goals of source soil removal for the cleanup action were determined based on the AOC in which each CAA was located. In the upgradient Upland AOC, comprising the Bulk Terminal, ASKO, and the adjacent W. Commodore Way ROW, the cleanup action was designed to achieve remediation levels (RELs) in soil to meet CULs long term in groundwater at the CPOC. In the downgradient Shoreline AOC, comprising the East Waterfront, the cleanup action was designed to achieve CULs in soil to meet CULs in all groundwater downgradient of the CPOC in a shorter time frame.

The cleanup action encompassed multiple CAAs, summarized as follows.

- In CAA-1 and CAA-2 on the Bulk Terminal, excavation and ISS were conducted to address soil with GRO, total DRO+ORO, and benzene exceeding RELs and contributing to groundwater contamination in the shallow WBZ. Limited petroleum impacts to groundwater in the intermediate WBZ were also present in the W. Commodore Way ROW downgradient of CAA-2. An Oxygen Release Compound Advanced (ORC-A) was applied in the northeast and northwest corners of CAA-2 after excavation.
- In CAA-3, located between the Bulk Terminal and ASKO, excavation was conducted to address soil with GRO, total DRO+ORO, benzene, and TCE exceeding RELs. Soil contamination in this CAA was shallow and did not appear to contribute to groundwater contamination.
- In CAA-4 on ASKO, soil with TCE exceeding RELs and contributing to groundwater contamination in the perched, shallow, and intermediate WBZs was addressed by ISS. An in situ groundwater treatment barrier of trademarked colloidal biomatrix (PlumeStop) mixed with sulfidated microscale zero-valent iron (ZVI) was injected along the northern boundary of ASKO, downgradient of CAA-4. Groundwater from the perched WBZ flowing onto ASKO from the upgradient BNSF parcel that has elevated concentrations of chlorinated volatile organic compounds (CVOCs) is additionally treated via an interceptor trench and permeable reactive barrier (PRB) wall amended with ZVI. The treated perched groundwater is infiltrated through an on-property gravity well and discharged into the shallow WBZ.
- In CAA-5 on ASKO, shallow soil with arsenic, GRO, and total DRO+ORO exceeding CULs and contributing to groundwater contamination in the perched WBZ was removed via excavation.
- In CAA-6 on the East Waterfront, soil with GRO, total DRO+ORO, and benzene exceeding CULs and contributing to groundwater contamination in the shallow WBZ was removed via excavation.
- In CAA-7 on the East Waterfront, soil with arsenic exceeding CULs and contributing to limited contamination in the shallow WBZ was removed via excavation.

Monitored natural attenuation (MNA) is a component of the cleanup action and is expected to occur in the dissolved-phase organic contaminant plumes remaining after completion of remedial action construction. The areas where MNA is expected to occur include the following:

- Within and downgradient of groundwater plumes where soil contaminant source removal was performed via excavation
- Adjacent to and downgradient of areas where soil source contamination was immobilized with ISS
- Downgradient of areas where bio-amendments or in situ groundwater treatment were used to accelerate biodegradation of organic contaminants

The final component of the cleanup action will include installation of a cap and implementation of institutional controls on the Upland AOC in conjunction with Property redevelopment to provide a protective barrier to remaining contamination.

1.2 PROPERTY REDEVELOPMENT STATUS

For focused redevelopment, the Upland AOC has been subdivided into seven separate lots (Lots A through G). Redevelopment for a portion of the Bulk Terminal on Lot F, the easternmost lot bordered by W. Commodore Way, 27th Avenue W., and W. Fort Street, was completed in 2025. Redevelopment began on Lot F (refer to Figure A.1) on October 30, 2023, and was substantially completed in May 2025. The redevelopment of Lot F included grading, installation of underground utilities, and construction of a multistory public storage building with a subslab vapor barrier.

Redevelopment of the ASKO parcel and the remaining portions of the Bulk Terminal parcel is anticipated to begin in late 2026 or early 2027 and includes shoring, installation of a stormwater detention facility, grading, construction of three one-story buildings totaling approximately 71,500 square feet for proposed use as garage condominiums (a type of vehicle storage building), and installation of the required cap on Lots A through E and Lot G.

Redevelopment plans for the waterfront parcels are currently underway, which include construction of a marina with four floating mooring piers, new bulkhead, shoreline boardwalk, and a two-story building totaling approximately 52,500 square feet. Construction on the waterfront parcels is not anticipated to begin until 2027.

When the redevelopment plans are finalized, locations of the proposed redevelopment features and impacts to the monitoring well network will be coordinated with Ecology.

This page is intentionally blank.

2.0 Monitoring Well Network Updates

An established monitoring well network is used to assess performance of the cleanup action and compliance with the CULs for groundwater specified in the CAP. This network includes monitoring wells located at the CPOC and downgradient of the CPOC to measure compliance with cleanup standards, wells upgradient of the CPOC to measure and quantify the effects of remediation, and sentinel wells to monitor the nature and extent of contaminants in groundwater when CULs have not been achieved at the CPOC or to evaluate plume boundary conditions.

The network of monitoring wells was updated in 2025 to decommission wells that were not necessary to evaluate remedy performance, within the anticipated redevelopment structure footprint, and to improve monitoring coverage of shallow WBZ groundwater.

A total of 10 wells were decommissioned in March 2025. These wells include MW01, MW02, MW03R, 01MW06, 01MW08, 01MW12, 01MW30, 01MW61, 02MW01, and 02MW18. Although not included in the GMP as a well to be decommissioned during redevelopment, 01MW12 was found buried approximately 3 feet below grade during the redevelopment of Lot F and was subsequently decommissioned because of concerns with creating a continuous seal if the monument were raised. Monitoring wells were decommissioned by a Washington State licensed driller in accordance with WAC 173-160-381.

One replacement monitoring well, 02MW20R, was installed in August 2025 on the East Waterfront parcel. Monitoring well 02MW20R was installed to replace 02MW20, a shallow WBZ well that overlapped with the CAA-6 excavation and was abandoned in 2021. Monitoring well 02MW20R was installed via direct-push drilling and constructed with a 10-foot prepacked screen (set at 2.5 to 12.5 feet below ground surface [bgs]). The well completion log for 02MW20R is included in Attachment A.1. Monitoring well 02MW20R is included in the long-term compliance monitoring well network downgradient of the CPOC in the Shoreline AOC and will be sampled annually beginning in Q3 2025 (refer to Section 6.0).

The current status of Site monitoring wells is summarized in Table A.1 and shown on Figure A.1. The short-term monitoring well locations are shown on Figure A.2 and long-term monitoring well locations are shown on Figure A.3. Short-term performance and long-term compliance monitoring are discussed in further detail in Section 3.0 and Section 6.0, respectively.

This page is intentionally blank.

3.0 Short-Term Performance Monitoring Activities

The groundwater monitoring activities completed in 2025 in the Upland AOC (ASKO and Bulk Terminal) represent the third year of short-term performance monitoring at the Site, which has been conducted quarterly per the GMP starting in January 2023. The short-term monitoring will continue for a total of 4 years in the Upland AOC (ASKO and Bulk Terminal); long-term monitoring began in the Shoreline AOC in 2025, as discussed in Section 6.0. The Upland AOC will transition to long-term monitoring per the GMP following completion of the short-term monitoring schedule. Post-remediation short-term performance monitoring was outlined in the GMP in pre-redevelopment (initial) and post-redevelopment phases. Due to changes in the Property redevelopment plans and schedule, the “initial” short-term monitoring has not yet transitioned to “after development” short-term monitoring but is anticipated to transition to after-development monitoring in 2026 or 2027.

Performance monitoring is being conducted to assess remedy effectiveness within and downgradient of active treatment areas and includes assessment of the natural attenuation processes, groundwater flow patterns, and groundwater quality trends after remediation. The third year of short-term performance monitoring was conducted in 2025 at wells illustrated on Figure A.2 on a quarterly, semiannual, or annual basis. A detailed field sampling and analytical schedule for each well included in the 2025 short-term performance monitoring program is presented in Table A.3.

Quarterly groundwater monitoring was conducted on March 3, June 5, September 16 and 17, and December 3, 2025. Monitoring wells were sampled using standard operating procedures for low-flow sampling with a peristaltic pump. Depth to groundwater and field parameters (pH, temperature, turbidity, specific conductance, dissolved oxygen [DO], and oxidation–reduction potential [ORP]) were also recorded at each well sampled.

Groundwater potentiometric surface elevations and flow patterns measured for the shallow WBZ in 2025 are presented in Figure A.4a and Figure A.4b. The cumulative IHS analytical results are presented in Table A.3 along with the result collected most recently prior to remediation for comparison (shown as pre-remediation). The 2025 results are illustrated by IHS or IHS groups: GRO, total DRO and ORO, TCE and VC, and benzene, in Figures A.5, A.6, A.7, and A.8, respectively. Penta results are not shown on a figure because analysis of this IHS was spatially limited to one well. IHS analytical results and field parameters (including secondary MNA parameter *cis*-1,2-dichloroethene [DCE]) are presented in Table A.4. Laboratory reports for all monitoring events are included in Attachment A.2.

3.1 GROUNDWATER FLOW PATTERN ANALYSIS

Groundwater flow directions and gradients were evaluated for the shallow WBZ semiannually during the wet and dry seasons by collecting depth to groundwater measurements at key shallow WBZ wells (refer to Table A.1) during the March and September quarterly monitoring events. Potentiometric maps of the shallow WBZ were prepared for each of these events and are

presented in Figures A.4a and A.4b. Water level elevations and depth to water measurements are included in Table A.2.

In the Upland AOC, shallow WBZ groundwater flow patterns were monitored to confirm that flow patterns have stabilized following remedial construction, including installation of the ISS monoliths.

- On the Bulk Terminal, the primary groundwater flow is to the north-northwest. Groundwater mounding continues to be observed in the central portion of the parcel in the vicinity of 01MW12, likely because this remains a relatively large unpaved area at the Site with predominantly gravel fill from various excavations. The steepest gradients were measured between the CAA-2 and CAA-4 monoliths. Groundwater elevations and flow direction were relatively consistent with the pre-ISS modeling presented in the Engineering Design Report (EDR; Crete 2021) with some variability between wet and dry season, mostly within the area of groundwater mounding.
- On ASKO, shallow WBZ gradients remain relatively flat downgradient of the CAA-4 ISS monolith relative to pre-remediation conditions. Gradients are steeper between the CAA-4 and CAA-2 monoliths relative to pre-remediation conditions; however, groundwater flow directions remain relatively consistent on the Property between pre- and post-remediation conditions with a primary flow direction to the north. On the BNSF parcel to the south (upgradient) of the ISS monolith, the predominant flow direction is westerly and transitioning to northerly as it flows around the impermeable monolith onto ASKO. No significant change in water level elevations was observed between the wet and dry seasons.

In the Shoreline AOC, at the East Waterfront, shallow WBZ groundwater elevations showed a primary flow direction to the north, relatively flat gradients toward the shoreline, and steeper gradients in the southeastern portion of the parcel consistent with topography and pre-remediation flow patterns.

3.2 BULK TERMINAL GROUNDWATER MONITORING

Short-term performance monitoring on the Bulk Terminal in 2025 included the following:

- Semiannual monitoring of shallow WBZ well 01MW19R adjacent to the ISS monolith; 01MW84 downgradient of the CPOC at the edges of the current total petroleum hydrocarbons (TPH) plume; 01MW40 upgradient of the CPOC; and 01MW12 upgradient of the CPOC prior to decommissioning in March 2025.
- Annual monitoring of shallow WBZ well 01MW66 in the localized penta plume.

On the Bulk Terminal, GRO concentrations remain greater than the CUL (800 micrograms per liter [$\mu\text{g/L}$]) at downgradient well 01MW84 with concentrations ranging from 960 to 1,400 $\mu\text{g/L}$. GRO concentrations on the Bulk Terminal continue to decrease compared to pre-remediation conditions with GRO concentrations at upgradient and CPOC wells 01MW19R, 01MW40, and 01MW12 ranging from non-detect to 750 $\mu\text{g/L}$.

Total DRO+ORO concentrations in upgradient wells 01MW12 and 01MW40 generally remain stable and greater than the CUL (500 µg/L) with exceeding concentrations ranging from 760 to 2,100 µg/L. Total DRO+ORO at CPOC and downgradient wells 01MW19R and 01MW84 continue to decrease (with maximum concentrations of 730 and 710 µg/L, respectively) relative to pre-remediation conditions. Total DRO+ORO at 01MW84 was less than the CUL with a concentration of 440 µg/L in March, but exceeded the CUL in September.

Benzene exceeded the CUL (0.44 µg/L) at 01MW19R with a concentration of 1.1 µg/L during both the March and September sampling events. Benzene concentrations at 01MW19R decreased by over 99% compared to the pre-remediation concentration of 2,600 µg/L. Benzene concentrations were non-detect at all remaining Bulk Terminal monitoring wells sampled in 2025.

Penta was only monitored in shallow WBZ well 01MW66 during March 2025. Penta concentrations remained stable relative to February 2024 results (0.76 µg/L) and remain greater than the CUL (0.20 µg/L) with a concentration of 0.84 µg/L in 2025. The overall post-remediation trend for penta appears to be decreasing relative to the baseline result of 3.6 µg/L in 2019.

3.3 ASKO GROUNDWATER MONITORING

Short-term performance monitoring on ASKO in 2025 included the following:

- Quarterly monitoring of shallow WBZ wells 01MW53R and 01MW85 downgradient of the PlumeStop in situ treatment barrier at the CPOC and at the edges of the current CVOC plume, and 01MW58R near the upgradient Property boundary cross-gradient of the ISS treatment area.
- Semiannual monitoring of shallow WBZ well 01MW15 upgradient and adjacent to the ISS treatment area; shallow WBZ wells MW05, MW06, and 01MW56 downgradient of the ISS treatment area; and 01MW46 adjacent to the ISS monolith.
- A supplemental sample was collected from 01MW15 in June (Q2) due to elevated TCE observed during March (Q1) monitoring.
- Contingency shallow WBZ well 01MW107 was sampled quarterly in 2025 because of a sudden increase of TCE at 01MW85 in June 2023. TCE concentrations at 01MW85 have significantly decreased since the sudden increase was observed.

On ASKO, TCE concentrations have decreased relative to pre-remediation conditions in the vicinity of the CAA-4 source area from 880 to 45 µg/L (at 01MW46) and from 240 to 12 µg/L (at MW05), respectively, but remain greater than the CUL of 0.50 µg/L. TCE concentrations at 01MW15, which is in the vicinity of the CAA-3 and CAA-4 source areas, have decreased since 2024, but remain greater than the pre-remediation conditions. MW06, which was slightly upgradient of and within the initial observed radius of influence of the PlumeStop, experienced an initial decrease in CVOCs relative to pre-remediation during the first post-remediation sampling event in 2013; however, TCE concentrations have increased at this location as contaminated groundwater continues to migrate from upgradient. A maximum TCE concentration of 410 µg/L was detected at MW06 during the March 2025 event, which is greater

than the pre-remediation concentration of 330 µg/L. TCE concentrations at upgradient well 01MW58R have significantly increased with concentrations ranging from 290 to 410 µg/L, relative to pre-remediation conditions of 42 µg/L. The TCE concentration of 410 µg/L at 01MW58R is the maximum TCE concentration observed in this well to date. TCE concentrations increased at downgradient ROW well 01MW53R, and TCE concentrations at downgradient well 01MW56 are lesser in magnitude than at other performance monitoring wells on-property but remain greater than the CUL with concentrations of 0.72 and 3.7 µg/L. The TCE concentrations at 01MW85 have remained relatively stable at 4.0 to 4.9 µg/L, which are elevated relative to pre-remediation conditions when TCE was not detected, but are an improvement from the maximum TCE concentration observed in 2023 (110 µg/L). These increased TCE concentrations are attributed primarily to increases in TCE in the shallow zone upgradient of ASKO, which is discussed further in Section 5.0. TCE was detected downgradient at contingency monitoring well 01MW107, but at concentrations less than the CUL.

VC, which is a breakdown product of TCE, has increased markedly relative to pre-remediation conditions at several ASKO monitoring wells, including 01MW15, 01MW46, 01MW53R, 01MW56, 01MW58R, 01MW85, and MW05. This is an expected result of biodegradation of TCE. VC has been relatively consistent at MW06 with slightly greater (3.6 µg/L) and slightly lesser (2.6 µg/L) concentrations observed in 2025 relative to pre-remediation conditions (2.8 µg/L). All shallow WBZ wells on ASKO have VC concentrations greater than the CUL (0.20 µg/L); however, VC was not detected at downgradient contingency well 01MW107. The increasing concentrations of VC, as well as the concentration of intermediate breakdown product DCE, is evidence that natural attenuation is occurring via anaerobic biodegradation. Results of natural attenuation parameters on ASKO are summarized in Section 4.2.2.

Benzene concentrations were monitored at source area wells 01MW46, MW05, and downgradient well MW06. Benzene was not detected at these wells in 2025.

3.4 CONTINGENCY ACTIONS AND GROUNDWATER MONITORING PLAN DEVIATIONS

The 2025 monitoring events were adaptively managed each quarter in coordination with Ecology based on the cumulative data collected. Each quarter, the IHS results were evaluated relative to the GMP decision framework for contingency sampling. Additionally, because of remedial investigation data collected (by others) on the upgradient BNSF parcel indicating a source of TCE and TPH are present in the perched and shallow WBZs, Ecology requested supplemental samples on the downgradient ASKO parcel to evaluate potential migration of TCE and TPH across the Property line that may contribute to elevated concentrations observed in ASKO groundwater. Refer to Section 5.2 for additional information on the BNSF remedial investigation results.

3.4.1 2025 Contingency Sampling

Contingency sample collection and analysis was conducted per the GMP to fulfill the short-term performance monitoring goals in coordination with Ecology.

- Contingency sampling of shallow WBZ well, 01MW107, downgradient of the ASKO parcel was implemented during the third quarter of 2023 and retained quarterly through 2025 because of elevated CVOC concentrations observed in monitoring wells 01MW53R and 01MW85.
- A supplemental sample was collected from 01MW15 in June (Q2) due to elevated TCE observed during March (Q1) monitoring.

Additional supplemental samples were collected in coordination with Ecology:

- TPH (DRO+ORO) was monitored during the March (Q1) and June (Q2) sampling events in the upgradient well 01MW58R to evaluate potential migration of TPH from the upgradient BNSF parcel.
- Supplemental grab samples were collected from the PRB vaults (Q1 and Q2) and the gravity well (Q1 and Q3) in response to BNSF data. Results are discussed under operation and maintenance (O&M) sampling in Section 5.1.

3.4.2 Contingency Actions

As described in the 2024 GMAR, Regensis Remediation Services (Regensis) evaluated the performance of the PlumeStop barrier following CUL exceedances of CVOCs at the CPOC seen during 2024 quarterly sampling events (Floyd|Snider 2024). Regensis determined that the barrier had a diffuse section approximately 50 feet long near 01MW85 and would require repair to ensure the maximum efficiency of groundwater treatment. On March 12 and 13, 2025, supplemental PlumeStop injections were completed at the PlumeStop barrier upgradient of CPOC wells 01MW53R and 01MW85. These injections were enhanced with AquiFix, a controlled-release organic carbon source compatible with colloidal activated carbon to more efficiently degrade DCE and VC.

3.4.3 Groundwater Monitoring Plan Deviations

There were no deviations from the GMP during the 2025 monitoring year, except for supplemental sampling described above, the decommissioning of 01MW12 on the Bulk Terminal due to damage concerns following the redevelopment of Lot F, and modifications to the “initial” and “after development” short-term monitoring locations (due to changes in the redevelopment plans), which were coordinated with and approved by Ecology.

3.5 DATA VALIDATION

A Compliance Screening (USEPA Stage 2A) data quality review was performed on TPH, total and dissolved metals, pentachlorophenol, and select volatile organic compound data resulting from

laboratory analysis. The data were reviewed using guidance and quality control criteria documented in the GMP (Floyd|Snider 2023), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020a), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA 2020b).

Based on the data quality review, data are determined to be of acceptable quality for use as reported or qualified. Data validation summaries with additional details for each quarterly event are included in Attachment A.3.

All data collected in 2025 were submitted to Ecology's Environmental Information Management system in January 2026.

4.0 Year 3 Data Evaluation and Performance Summary

Data evaluation is performed to assess compliance with cleanup standards, determine whether indications of organic contaminant degradation are present, and identify long-term groundwater quality trends and flow patterns as described in the following sections. The anticipated restoration time frame for the Shoreline AOC (East Waterfront) monitoring wells to achieve CULs estimated in the CAP is 5 years (Ecology 2020). The anticipated restoration time frame for the Upland AOC (including both ASKO and the Bulk Terminal) estimated in the CAP is 15 years at and downgradient of the CPOC. The most recent pre-remediation result and post-remediation datasets are presented in time concentration plots in Attachment A.4 to support evaluation of long-term trends related to meeting the restoration time frame goals. These plots are presented for compliance monitoring wells and select additional key locations to support long-term trend analysis. For some IHSs with low numerical CULs and highly variable conditions across the Site (such as benzene, TCE and VC), results are also presented on a logarithmic scale to provide better resolution for detections close to the CUL.

4.1 COMPLIANCE WITH CLEANUP STANDARDS

Cleanup standards are defined as a CUL combined with a POC where the CUL must be met. Short-term groundwater monitoring results are evaluated on general performance relative to pre-remediation conditions in addition to CULs and cleanup standards. Long-term monitoring results are evaluated to confirm that the remedy results in groundwater quality meet Site CULs within the predicted restoration time frame. Long-term confirmation monitoring will confirm that IHS concentrations remain less than CULs at the CPOC and downgradient of the CPOC.

4.1.1 Bulk Terminal

Groundwater compliance will be evaluated for the Bulk Terminal through long-term confirmation monitoring of wells at the CPOC (shallow WBZ wells 01MW03, 01MW19R, 01MW11R, 01MW86, and 01MW87; and intermediate WBZ well 01MW51). Of these wells, short-term monitoring is currently being conducted at 01MW19R. Total DRO+ORO and benzene exceed the CULs at well 01MW19R in 2025 with exceedance factors ranging from 1.0 to 1.5 for total DRO+ORO, and 2.5 for benzene. There were no GRO exceedances at 01MW19R in 2025. Pre-remediation to 2025 IHS concentrations at 01MW19R are shown on the time concentration plots included in Attachment A.4. Overall, groundwater concentrations continue to decrease relative to pre-remediation conditions and are on an apparent track to comply with cleanup standards within the prescribed restoration time frame.

4.1.2 ASKO Hydraulic

Groundwater compliance will be evaluated for ASKO through long-term confirmation monitoring of wells at the CPOC (shallow WBZ wells 01MW53R, 01MW85, and 01MW89; and intermediate WBZ well 01MW112). Of these wells, short-term monitoring is currently being conducted at 01MW53R and 01MW85. Time concentration plots for TCE and VC at 01MW53R and 01MW85 are

included in Attachment A.4. In 2025, TCE and VC exceeded the CULs at both 01MW53R and 01MW85. 2025 exceedance factors for TCE and VC at 01MW53R and 01MW85 ranged from 1.9 to 44 and 9.8 to 325, respectively. Trends for TCE appeared relatively flat at these locations in 2025, whereas VC trends appear to be increasing. Contingency monitoring of 01MW107 were non-detect or had results less than the CUL for CVOCs downgradient of the CPOC, which indicates that the CVOC exceedances at 01MW53R and 01MW85 are localized and not migrating beyond the CPOC.

4.2 ASSESSMENT OF NATURAL ATTENUATION

Natural attenuation is expected to occur following removal of source soil contamination via excavation and ISS. The primary evidence of natural attenuation is decreasing IHS concentrations. Measurement of primary geochemical parameters collected during field sampling (particularly DO and ORP, but also pH, conductivity, and temperature) and secondary geochemical parameters (such as dissolved gases) provide additional information regarding the mechanisms of biotic degradation and favorability of site conditions for ongoing attenuation. Secondary geochemical parameters were not collected in 2025.

4.2.1 Bulk Terminal

On the Bulk Terminal, natural attenuation is occurring in the shallow and intermediate WBZ following removal of TPH-contaminated source soil by excavation in CAA-1 and CAA-2 and by ISS in CAA-2. The primary mechanism of attenuation of TPH is aerobic degradation, as discussed in Section 3.3.1 of the GMP. Downgradient of CAA-2, aerobic degradation was additionally enhanced by addition of ORC-A within the CAA-2 excavation. The primary evidence of attenuation is an apparent trend of decreasing concentrations of TPH constituents including GRO, total DRO+ORO, and benzene.

Post-remediation monitoring provides evidence of TPH degradation occurring in the shallow WBZ on the Bulk Terminal. For instance, at 01MW19/01MW19R at the downgradient Property line, benzene has decreased from 2,600 µg/L pre-remediation to 1.1 µg/L post-remediation, and GRO has decreased from 10,000 µg/L (pre-remediation) to less than the CUL with concentrations ranging from 490 in 2024 to 750 µg/L in 2025. Total DRO+ORO decreased at 01MW19/01MW19R from 1,900 µg/L (pre-remediation) with some seasonal variability ranging from 510 to 730 µg/L in 2025. Similar trends of decreasing TPH constituent concentrations are observed at 01MW84 near the downgradient edge of the pre-remediation TPH plume, as shown on Table A.4. At monitoring wells on-property closer to the TPH source soil areas, such as 01MW40, there have been seasonal spikes in concentrations relative to pre-remediation conditions, which are likely the result of groundwater fluctuations in this area temporarily remobilizing residual TPH from smear zone soils. Eventually, decreasing trends are expected at 01MW40; however, low levels of residual TPH in soil greater than CULs but less than RELs is likely a residual source to groundwater that is expected to naturally attenuate within the restoration time frame.

The results of primary geochemical parameter analysis in groundwater at the Bulk Terminal parcel indicate that conditions are trending toward anaerobic degradation indicated by generally low DO and negative ORP. DO concentrations generally remain less than 0.72 milligrams per liter (mg/L);

however, several locations (01MW19R, 01MW40, and 01MW84) show increases in DO concentrations (up to 1.30 mg/L) relative to 2024. TPH will continue to degrade under anaerobic conditions, but generally at a slower rate than under aerobic conditions. Infiltration of surface water through unpaved areas and migration of upgradient groundwater with aerobic background conditions are also sources that serve to replenish DO that is consumed by the degradation process. Primary geochemical parameters will continue to be assessed during subsequent monitoring events.

4.2.2 ASKO Hydraulic

On ASKO, natural attenuation is occurring following encapsulation of TCE-contaminated source soil by ISS in CAA-4. The primary mechanism of attenuation of TCE is anaerobic degradation by reductive dechlorination, as discussed in Section 3.3.2 of the GMP. Downgradient of CAA-4, reductive dechlorination is expected to occur biotically from *Dehalococcoides* bacteria, which are naturally present in saturated soil. Additionally, at the downgradient Property line where PlumeStop was amended with a ZVI electron donor and BDI Plus (an enriched natural consortium containing species of *Dehalococcoides*), abiotic degradation is expected to occur concurrently with biotic degradation. Supplemental PlumeStop injections performed at the downgradient in situ treatment barrier also added a source of organic carbon to promote biotic degradation of the TCE breakdown products (refer to Section 3.4.2). The primary evidence of reductive dechlorination is a trend of decreasing concentrations of the parent-product TCE accompanied by increasing concentrations of the intermediate breakdown products of DCE and VC. The final step of successful biodegradation is indicated by decreasing DCE and VC accompanied by increasing concentrations of dissolved gases (ethene, ethane, and methane). Abiotic degradation by ZVI is expected to result primarily in ethene production with de minimis amounts of DCE and VC.

The observed molar concentrations of TCE and VC allow for direct comparison of the number of TCE versus VC molecules that present and provide key context for assessing whether the overall amount of CVOCs is increasing, decreasing, or stable over time at a given location. Plots of molar concentrations since pre-remediation at key ASKO performance wells are presented in addition to time concentration plots in Attachment A.4. It is important to note that these plots present results for wells outside of the footprint of the historically contaminated soil and most highly contaminated shallow WBZ groundwater plume on ASKO, where CVOCs were encapsulated by ISS, and should thus reflect the progress of attenuation of remaining dissolved or sorbed mass in the historically less-contaminated portion of the groundwater plume.

2025 monitoring results show an overall increase in total CVOC molar mass at wells outside the ISS monolith since the pre-remediation results in 2019. The distribution of TCE and its breakdown products causing this increase is variable between hydraulically upgradient and downgradient wells.

- Near the upgradient Property line at 01MW58R, increases are driven primarily by TCE and DCE. This location experienced the largest relative increase in CVOCs, with a total molar mass almost 300 times greater than pre-remediation and the maximum molar mass of all ASKO wells monitored at the end of 2025.
- Cross-gradient to the ISS monolith at 01MW46 and 01MW15, increases are due to DCE and VC, with VC production greatly increased particularly at 01MW15. These

wells are both located in zones of fairly flatter gradients where some groundwater stagnation around the ISS monolith is expected. The overall increase at 01MW46 was also lesser in relative magnitude compared to other locations on ASKO.

- In the downgradient portion of ASKO at 01MW56, MW05 and MW06, conditions are variable.
 - At 01MW56 (closest to the ISS monolith), TCE increases are primarily observed with some influence by VC; however, the overall magnitude of CVOC mass increase is relatively low consistent with 01MW46. This well is also potentially influenced by groundwater stagnation adjacent to the ISS monolith.
 - At MW06 (farthest west of the ISS monolith), TCE increases are primarily observed with additional contributions by DCE.
 - At MW05 (between 01MW65 and MW06) increases are driven by DCE.
- At the CPOC wells 01MW53R and 01MW85, conditions are similar to the immediately upgradient wells.
 - At 01MW53R, TCE increases are primarily observed.
 - At 01MW85, DCE increases are primarily observed.

The available monitoring data show continued upgradient contributions of TCE in groundwater that undergo biotic dechlorination to varying degrees as contamination travels downgradient in the dissolved phase. The occurrence of dechlorination is apparent when the 2025 results are compared to pre-remediation conditions, with large increases in DCE and VC mass detected at all ASKO wells. While the occurrence of biodegradation is overall beneficial to the Site, greater fluxes of DCE and VC will continue to be a challenge for remediation at the downgradient PlumeStop barrier because they are less readily sorbed by PlumeStop relative to TCE and less susceptible to abiotic degradation via ZVI. The efficacy of supplemental PlumeStop injection with organic carbon amendment to promote biodegradation will continue to be assessed in 2026.

The geochemical parameters in groundwater at ASKO indicate that DO increased between 2024 and 2025 (with concentrations ranging between 0.20 and 1.63 mg/L within the CVOC plume). Similarly, increases in DO were observed in several Bulk Terminal wells, as described in Section 4.2.1. With DO suddenly increasing at several locations across the Site, a potential upgradient source of groundwater oxygenation may be the cause, as the Property use has remained consistent since the start of post-remediation performance monitoring in 2023. Upgradient BNSF groundwater parameters from 2025 were not available to follow this line of evidence; however, if similar increases in DO are observed during future Site sampling events, BNSF groundwater parameters will be useful for natural attenuation analysis. DO can act as a competitor electron acceptor to CVOCs, slowing the process of dechlorination. However, corresponding ORP measurements continued to be negative at most wells, which is indicative of a reducing environment preferable to dechlorination. Geochemical parameter trends will continue to be assessed in 2026.

5.0 Upgradient Groundwater Quality Evaluation

Data recently collected in the vicinity of the ASKO and BNSF Property line are important to the overall assessment of groundwater quality and performance monitoring described in Section 4.0. The groundwater results from BNSF are relevant to both short-term and long-term compliance monitoring on ASKO since the perched WBZ groundwater from the BNSF parcel is captured and treated by the interceptor trench and PRB installed on the upgradient Property boundary, and is then discharged to the shallow WBZ on the ASKO parcel via a gravity well. Additionally, shallow WBZ groundwater flow patterns show that groundwater is flowing from the upgradient BNSF parcel onto the ASKO parcel (refer to Figures A.4a and A.4b).

The BNSF parcel data are collected under a separate AO between BNSF and Ecology. The results of the BNSF quarterly groundwater monitoring are reported in their AO progress reports provided to Ecology by Arcadis U.S. Inc. (Arcadis 2025a, 2025b, 2025c, 2026); therefore, the BNSF data are not included in this report. Monitoring locations are shown on Figure A.1.

5.1 OPERATION AND MAINTENANCE SAMPLING

The interceptor trench and PRB treatment vault at the ASKO/BNSF parcel boundary were designed to capture and treat perched WBZ groundwater from the upgradient BNSF parcel. The PRB, located in a treatment vault at the western end of the interceptor trench (refer to Figure A.2), treats the CVOC and TPH-impacted perched groundwater flowing from the upgradient BNSF parcel through the interceptor trench with ZVI-amended bedding sand. The treated groundwater is then discharged into a holding vault (clear vault) that is eventually gravity-fed into the gravity well, which infiltrates into the shallow WBZ on the upgradient portion of the ASKO parcel. As part of O&M monitoring of the PRB treatment vault, grab samples for CVOCs were collected from the treatment (influent) vault, the clear vault, and the gravity well in 2023. The initial sampling showed that the CVOCs in the gravity well were an order of magnitude greater than the CVOCs in the clear vault, which infiltrates directly into the gravity well. At the request of Ecology, additional sampling of the treatment vault (influent vault), clear vault, and gravity well was conducted in 2024 and 2025. The results are included in Table A.5. This sampling was requested in response to the upgradient BNSF remedial investigation data, which shows elevated TCE and TPH concentrations on the BNSF parcel in both the perched and shallow WBZs (further described in Section 5.2).

The O&M samples in Table A.5 were compared to the BNSF remedial investigation groundwater data (Arcadis 2025a, 2025b, 2025c, 2026), and the ASKO parcel groundwater (e.g., 01MW58R) in Table A.4. This data comparison confirms that the treated perched WBZ groundwater discharging through the clear vault has CVOC concentrations at an order of magnitude less than the CVOC concentrations observed in the gravity well and the immediately downgradient ASKO well (01MW58R), and concentrations at two orders of magnitude less than the BNSF remedial investigation well (e.g., MW-BN-03). This indicates that the elevated CVOC concentrations in the gravity well are not from the PRB interceptor trench, but rather from groundwater contamination that occurs in the upgradient shallow WBZ.

5.2 BNSF RAILWAY COMPANY GROUNDWATER MONITORING RESULTS

In 2025, semiannual groundwater monitoring was performed by BNSF on the portion of their Property upgradient of CAA-4 on ASKO. This groundwater monitoring was conducted following their 2023 soil and reconnaissance groundwater monitoring investigation as part of their remedial investigation. The 2025 investigation consisted of semiannual monitoring of perched and shallow WBZ groundwater from existing and new wells installed on the BNSF parcel in 2025. Two new shallow WBZ groundwater monitoring wells (MW-BN-06 and MW-BN-07) were installed on the BNSF parcel in February 2025.

Available data for the BNSF remedial investigation were reviewed, including water level elevations and analytical laboratory results for CVOC and/or total DRO+ORO collected from eight perched WBZ monitoring wells and six shallow WBZ monitoring wells collected in March and September 2025. To better understand current upgradient conditions, these 2025 results for CVOCs and total DRO+ORO were reviewed relative to the 2020 Supplemental Upland Remedial Investigation and Feasibility Study dataset collected in 2019 (Floyd|Snider 2020).

The 2019 sampling showed that the greatest concentrations of TCE on the BNSF parcel in soil and groundwater were in the perched WBZ (Floyd|Snider 2020). Since construction of the interceptor trench and PRB vault by TOCST along the upgradient ASKO parcel boundary, TCE concentrations have decreased across the perched WBZ relative to their corresponding 2019 results. The decline in TCE concentrations in the perched WBZ on the BNSF parcel is attributed to ongoing interception and treatment by the PRB and dewatering of the perched WBZ to water level elevations below the most highly contaminated soils.

TCE did not exceed CULs in the shallow WBZ on the BNSF parcel during 2019 sampling; however, TCE exceeded the CUL (0.50 µg/L) at multiple BNSF wells with concentrations up to 8,180 times the CUL in 2025. TCE concentrations exceeded the CUL at 01MW93, MW-BN-03, and new well MW-BN-07, with maximum concentrations of 1,170, 4,090, and 30.8 µg/L, respectively. The maximum concentration of TCE in groundwater at MW-BN-07 was collected adjacent to the apparent TCE soil source contamination at the top of the shallow WBZ (25 feet bgs) where a concentration of 16.2 mg/kg was detected at soil boring SB-BN-13 (324 times greater than the CUL of 0.05 mg/kg; Arcadis 2024). On the ASKO parcel, elevated TCE was also detected at the gravity well, which is screened in the shallow WBZ downgradient from MW-BN-03 and MW-BN-07. TCE concentrations in shallow WBZ groundwater cross-gradient from the gravity well at 01MW58R significantly increased relative to pre-remediation results at 01MW58. TCE concentrations at 01MW58R increased by an order of magnitude from 2024 to 2025. These results indicate that the presence of TCE-impacted soil in the BNSF parcel is acting as a continuing source of impacts to shallow WBZ groundwater on the BNSF parcel, which is migrating downgradient to the ASKO parcel.

CUL exceedances of lesser magnitude for total DRO+ORO were also detected at the new shallow WBZ BNSF wells MW-BN-06 and MW-BN-07, at BNSF wells 01MW93 and 01MW94, and at 01MW58R on the ASKO parcel. The total DRO+ORO exceedances in the BNSF perched WBZ

monitoring wells ranged from 1,870 to 9,780 µg/L, and in the shallow WBZ monitoring wells ranged from 714 to 2,771 µg/L. Additionally, during the BNSF September 2025 groundwater monitoring event, 0.93 feet of light non-aqueous phase liquid (LNAPL) was measured in perched WBZ well MW-BN-05. According to Arcadis, BNSF's consultant, the LNAPL resembled a mixture of kerosene-range petroleum and gasoline (Ecology 2025).

The potentiometric surface maps for the first and third quarter monitoring events of 2025, presented on Figures A.4a and A.4b, respectively, show that shallow WBZ groundwater upgradient of the ISS monolith flows parallel to the Property line to the west-northwest. This parallel flow along the Property line is consistent with predicted post-construction flow patterns presented in the EDR (Crete 2021). West of the ISS monolith, westerly horizontal flow transitions to an overall northerly direction onto the ASKO parcel. The groundwater flow patterns indicate that shallow WBZ groundwater is migrating from the BNSF parcel onto the ASKO parcel. Uncontrolled contaminant migration in the shallow WBZ from BNSF onto ASKO will have adverse effects on the cleanup action and associated restoration time frame.

This page is intentionally blank.

6.0 Long-Term Compliance Monitoring Activities

The groundwater monitoring activities completed in 2025 include the first year of long-term compliance monitoring in the Shoreline AOC at the Site. After completion of the short-term post-remediation performance monitoring, shallow wells will be sampled for long-term compliance monitoring. As documented in the 2024 GMAR, groundwater collected from the East Waterfront wells monitored under the short-term GMP achieved IHS concentrations less than CULs for more than three consecutive monitoring events and will therefore be sampled annually for long-term compliance monitoring in accordance with the GMP. In coordination with Ecology, the only modification from the GMP long-term monitoring scope was that the first long-term monitoring sampling event was conducted in the third quarter of 2025 rather than in the fourth quarter to correspond to the quarter with the most historical IHS detections.

Long-term compliance monitoring is being conducted annually to confirm that IHS concentrations remain less than the CULs in groundwater downgradient of the CPOC at East Waterfront wells illustrated on Figure A.3. A detailed field sampling and analytical schedule for each well included in the long-term compliance monitoring program is presented in Table A.6.

6.1 EAST WATERFRONT GROUNDWATER MONITORING

Long-term compliance monitoring on the East Waterfront in 2025 included the following:

- Annual confirmation monitoring of shallow wells 02MW04R, 02MW07, 02MW19, and 02MW20R within the pre-remediation groundwater contaminant plume, and 02MW17 outside of the pre-remediation groundwater plume.

On the East Waterfront, GRO and benzene remain non-detect at all wells monitored in 2025. Total DRO+ORO was detected at 02MW07, 02MW19, and 02MW20R at concentrations less than the CUL of 500 µg/L, and all detected results were flagged by the laboratory as a poor match to the chromatographic standard, indicating they are likely due to naturally occurring organics. Arsenic was detected at 02MW07 and 02MW19 at concentrations less than the natural background level of 8.0 µg/L and the Site arsenic CUL of 5.0 µg/L. Arsenic exceeded the CUL at 02MW20R with a concentration of 7.3 µg/L but does not exceed the natural background level. The arsenic CUL of 5.0 µg/L was originally established based on background levels that had been published at the time the CAP was developed, but a revised Puget Sound Basin background level of 8.0 µg/L was subsequently established in the Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022). The updated background concentration, in addition to the original arsenic CUL established in the CAP, will be used going forward to assess cleanup progress for arsenic at the Site. Evaluation of contingency monitoring or other contingency actions will be triggered only if detected arsenic concentrations exceed the current natural background value.

6.2 ASSESSMENT OF NATURAL ATTENUATION

On the East Waterfront, all TPH-contaminated source soil was removed by excavation in CAA-6 in 2021 and attenuation of the post-excavation dissolved-phase TPH constituents in groundwater

were expected to occur quickly by aerobic degradation. The 2025 results support this expectation.

Geochemical conditions on the East Waterfront are also aerobic, with generally positive ORP and DO up to 2.9 mg/L at 02MW04R nearest to the former TPH source area. These conditions suggest that degradation of the remaining petroleum is complete or near complete, thus reducing the demand for oxygen necessary to facilitate the degradation process.

6.3 DATA VALIDATION

A Compliance Screening (USEPA Stage 2A) data quality review was performed on TPH, total and dissolved metals, pentachlorophenol, and select VOC data resulting from laboratory analysis. The data were reviewed using guidance and quality control criteria documented in the GMP (Floyd|Snider 2023), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020a), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA 2020b).

Based on the data quality review, data are determined to be of acceptable quality for use as reported or qualified. Data validation summaries with additional details for each quarterly event are included in Attachment A.3.

All data collected in 2025 were submitted to Ecology's Environmental Information Management system in January 2026.

7.0 Recommended Groundwater Monitoring Updates

The Year 3 compliance monitoring data were evaluated quarterly, and minor modifications were made to the monitoring program each quarter in coordination with Ecology, using the adaptive management decision framework presented in Attachment A.3 of the GMP. The recommendations for the 2026 groundwater monitoring program based on the Year 1 (2023), Year 2 (2024), and Year 3 (2025) dataset are summarized in this section by site-wide and parcel-specific recommendations. The 2026 groundwater monitoring program with these recommendations is also presented in an updated table of monitoring wells and analytical schedule in Attachment A.5 and in Figure A.9.

7.1 SITE-WIDE GROUNDWATER FLOW PATTERNS

Hydrogeologic measurements of the shallow WBZ are recommended to continue semiannually in the Upland AOC in the first and third quarters of the year to represent the wet and dry seasons. Water levels will be recorded from the Upland AOC shallow WBZ wells designated for sampling in the monitoring network, plus an upgradient well for each parcel (01MW58R, 01MW83, and 01MW100), and a few additional locations for full spatial coverage across the shallow WBZ (01MW35, 01MW102, 01MW106, and 01MW107). Potentiometric contour maps of the Upland AOC shallow WBZ for the wet and dry seasons will be prepared for the 2026 GMAR. To the extent possible, collection of groundwater elevation measurements will be coordinated with BNSF's consultant, Arcadis, as requested by Ecology, to document flow conditions across the BNSF and ASKO parcels.

7.2 BULK TERMINAL

Groundwater monitoring is recommended to continue on the Bulk Terminal consistent with 2025 monitoring. Wells to be monitored in 2026 include the following:

- Semiannual monitoring of 01MW19R, 01MW84, and 01MW40 (01MW90R to replace 01MW40 following completion of cap installation).
- Annual monitoring of 01MW66 and 01MW87.

As previously approved by Ecology, ROW monitoring wells 01MW34, 01MW47, and 01MW48 will be decommissioned in 2026 as a best management practice due to the risk of traffic damage. A decision framework for decommissioning performance monitoring wells is included in Attachment A.6. Additionally, monitoring wells in conflict with redevelopment plans will be decommissioned prior to redevelopment.

7.3 ASKO HYDRAULIC

Groundwater monitoring is recommended to continue on the ASKO parcel consistent with 2025 monitoring, which includes the following:

- Semiannual monitoring of 01MW53R, 01MW58R, 01MW85, 01MW15, 01MW46, 01MW56, MW05, and MW06.

- Semiannual contingency monitoring of 01MW107, or as needed in coordination with Ecology.

The above monitoring program includes considerations for the following modifications to be implemented during the 2026 monitoring year:

- Semiannual monitoring will be retained at key wells in 2026 including 01MW53R, 01MW85, and 01MW58R, which are being used to evaluate performance of the in situ treatment barriers at the upgradient and downgradient Property boundaries.
- TCE and TPH in upgradient shallow WBZ groundwater from the BNSF parcel onto the ASKO parcel will continue to be assessed via semiannual results at 01MW58R and any Ecology-required monitoring on BNSF. The need for additional groundwater monitoring wells in this area will be evaluated in coordination with Ecology.
- Semiannual contingency monitoring will be added at 01MW106 downgradient of the CPOC to further assess CVOC conditions given the CUL exceedances detected at 01MW53R and 01MW85.
- One round of analysis for dissolved gases will be performed on samples from on-property wells 01MW46 and MW05. These wells appear to be less impacted by upgradient TCE and have trends of decreasing TCE accompanied by increasing DCE and vinyl chloride. The presence of end breakdown products of TCE at these wells provides a line of evidence that biodegradation would be effective at the Site if source control were implemented for upgradient TCE.
- As previously approved by Ecology, ROW monitoring well 01MW52 will be decommissioned per the GMP.

7.4 EAST WATERFRONT

Monitoring wells 02MW04R, 02MW07, 02MW17, 02MW19, and 02MW20R will continue to be sampled annually per the GMP long-term monitoring scope with each sampling event occurring in the third quarter. No modifications to this scope are anticipated for 2026.

7.5 CONTINGENCY ACTION EVALUATION

Per the CAP and GMP, contingency actions would be evaluated if degradation rates appear to be too slow to reliably meet CULs within the predicted restoration time frame or if degradation is not apparent. This evaluation is being conducted proactively ahead of the 5-year Ecology periodic review period, as discussed in the GMP.

The post-remediation groundwater quality on ASKO shows continued TCE inputs to upgradient groundwater resulting in increased molar mass of CVOCs in areas outside of the ISS monolith relative to pre-remediation conditions in these areas. Contingency action taken to address potential impacts at the CPOC in 2025 included supplemental PlumeStop injection with an

organic carbon electron donor amendment. The effects of supplemental PlumeStop at the CPOC will continue to be assessed via monitoring for IHSs in 2026.

7.6 SCHEDULE AND REPORTING

Groundwater monitoring will be completed on a semiannual basis in 2026 in accordance with the GMP and the recommendations contained in this GMAR, in coordination with Ecology. Per the Prospective Purchaser Consent Decree, quarterly progress reports will be submitted by the 15th of the month after each quarter and the 2026 GMAR will be submitted by March 1, 2027.

This page is intentionally blank.

8.0 References

- Arcadis U.S. Inc. (Arcadis). 2024. *Progress Report – First Quarter 2024, Agreed Order No. DE 18042, Facility Site Identification No. 75486194, Cleanup Site Identification No. 14604, Time Oil Bulk Terminal – BNSF Property, Seattle, WA*. Letter from Kyle Haslam, Arcadis U.S., Inc., to Tena Seeds, Washington State Department of Ecology. 16 April.
- _____. 2025a. *Progress Report – First Quarter 2025, Agreed Order No. DE 18042, Facility Site Identification No. 75486194, Cleanup Site Identification No. 14604, Time Oil Bulk Terminal – BNSF Property, Seattle, WA*. Letter from Kyle Haslam, Arcadis U.S., Inc., to Tena Seeds, Washington State Department of Ecology. 14 April.
- _____. 2025b. *Progress Report – Second Quarter 2025, Agreed Order No. DE 18042, Facility Site Identification No. 75486194, Cleanup Site Identification No. 14604, Time Oil Bulk Terminal – BNSF Property, Seattle, WA*. Letter from Kyle Haslam, Arcadis U.S., Inc., to Tena Seeds, Washington State Department of Ecology. 15 July.
- _____. 2025c. *Progress Report – Third Quarter 2025, Agreed Order No. DE 18042, Facility Site Identification No. 75486194, Cleanup Site Identification No. 14604, Time Oil Bulk Terminal – BNSF Property, Seattle, WA*. Letter from Kyle Haslam, Arcadis U.S., Inc., to Tena Seeds, Washington State Department of Ecology. 15 October.
- _____. 2026. *Progress Report – Fourth Quarter 2025, Agreed Order No. DE 18042, Facility Site Identification No. 75486194, Cleanup Site Identification No. 14604, Time Oil Bulk Terminal – BNSF Property, Seattle, WA*. Letter from Kyle Haslam, Arcadis U.S., Inc., to Tena Seeds, Washington State Department of Ecology. 15 January.
- Crete Consulting, Inc. (Crete). 2021. *Engineering Design Report, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 28 June.
- _____. 2022. *Remedial Action Completion Report, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 31 January.
- _____. 2023. *Long-Term Compliance Monitoring Plan, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 10 February.
- Floyd|Snider. 2020. *Supplemental Upland Remedial Investigation and Feasibility Study*. Prepared for Cantera Development Group, LLC. September.
- _____. 2023. *Time Oil Bulk Terminal Site—Groundwater Monitoring Plan*. Prepared for Cantera Development Group, LLC. January.
- _____. 2024. *Long-Term Compliance Monitoring Annual Report, Appendix A: 2023 Groundwater Monitoring Annual Report*. Prepared for Cantera Development Group, LLC. February.

U.S. Environmental Protection Agency (USEPA). 1986. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Prepared by the Office of Solid Waste and Emergency Response. EPA-530/SW-846.

_____. 2020a. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-542-R-20-006/OLEM 9240.1-66. November.

_____. 2020b. *National Functional Guidelines for Organic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-20-005/OLEM 9240.0-51. November.

Washington State Department of Ecology (Ecology). 2020. *Cleanup Action Plan, Time Oil Bulk Terminal, Seattle, WA*. 28 September.

_____. 2022. *Natural Background Groundwater Arsenic Concentrations in Washington State: Study Results*. January.

_____. 2025. *Time Oil BNSF NAPL*. Email from Tena Seeds, Ecology, to Kim Hempel, Pioneer Engineering & Environmental Services, Mike Ciserella and Doug Ciserella, Cantera Development Group, and Kristin Anderson and Lynn Grochala, Floyd|Snider. 19 December.

**Long-Term Compliance Monitoring
Annual Report Appendix A:
2025 Groundwater Monitoring Annual Report**

Time Oil Bulk Terminal

Tables

Table A.1
2025 Monitoring Well Network Summary

Well ID and Status	Parcel	Water-Bearing Zone	Screened Interval (feet below TOC)	Note
Short-Term Performance Monitoring				
01MW19R	BT	Shallow	10–20	Semiannual monitoring.
01MW66	BT	Shallow	12–22	Sampled annually. On-property penta plume.
01MW84	BT	Shallow	17–23	Quarterly monitoring until redevelopment, then transition to semiannual.
MW05	ASKO	Shallow	19–29	Monitor until redevelopment; decommission during Property redevelopment (within structure footprint).
MW06	ASKO	Shallow	18–28	To be retained for semiannual monitoring after MW05 is decommissioned.
01MW15	ASKO	Shallow	10–30	Monitor until redevelopment; decommission during Property redevelopment (within structure footprint).
01MW46	ASKO	Shallow	13–28	Monitor until redevelopment; decommission during Property redevelopment (within structure footprint).
01MW53R	ASKO	Shallow	17–27	Quarterly monitoring until redevelopment, then transition to semiannual.
01MW58R	ASKO	Shallow	24–34	Quarterly monitoring until redevelopment, then transition to semiannual.
01MW56	ASKO	Shallow	16–26	Semiannual monitoring.
01MW85	ASKO	Shallow	18–27	Quarterly monitoring until redevelopment, then transition to semiannual.
Long-Term Compliance Monitoring				
02MW04R	EW	Shallow	5–15	Sampled annually during Q3.
02MW07	EW	Shallow	1.5–11.5	Sampled annually during Q3.
02MW17	EW	Shallow	1–11	Sampled annually during Q3.
02MW19	EW	Shallow	3–13	Sampled annually during Q3.
02MW20R	EW	Shallow	2.5–12.5	Installed Q3 2025. Sampled annually during Q3.
Contingency Performance or Water Level Measurement Only				
01MW35	BT	Shallow	10–20	Water level measurement only.
01MW87	BT	Shallow	11–21	Retained for annual contingency monitoring in place of 01MW12.
01MW100	BT	Shallow	20–30	Water level measurement only.
01MW102	BT	Shallow	10–20	Water level measurement only.
01MW80	ASKO	Shallow	20–28	Sample if increasing IHS concentrations at 01MW53R or 01MW85.
01MW89	ASKO	Shallow	18–26	Sample if increasing IHS concentrations at 01MW53R or 01MW56.
01MW106	ASKO	Shallow	15–25	Contingency sample if IHS concentrations increase at MW06.
01MW107	ASKO	Shallow	17–27	Sample if increasing IHS concentrations at 01MW53R or 01MW85.
01MW83	EW	Shallow	14–24	Water level measurement only.
Active Monitoring Wells Not Currently Sampled				
01MW03	BT	Shallow	10–25	
01MW36	BT	Shallow	10–20	
01MW49R	BT	Intermediate	35–40	
01MW51	BT	Intermediate	29–39	In right-of-way.
01MW86	BT	Shallow	14–24	In right-of-way.
01MW101	BT	Shallow	17–21	
01MW104	BT	Intermediate	28–33	
01MW108	ASKO	Intermediate	30–35	
02MW03	EW	Shallow	10–20	
02MW16	EW	Shallow	5–15	
02MW21	EW	Intermediate	18–28	
Decommissioned in 2025				
01MW06	BT	Shallow	10–25	Well has no specified monitoring purpose.
01MW08	BT	Shallow	9–25	Well has no specified monitoring purpose.
01MW12	BT	Shallow	4–19	Monitoring purpose will be fulfilled by 01MW87.
01MW30	BT	Shallow	15–28	Well has no specified monitoring purpose.
MW01	ASKO	Shallow	18–28	Well was within anticipated redevelopment structure footprint.
MW02	ASKO	Shallow	18–28	Well was within anticipated redevelopment structure footprint.
MW03R	ASKO	Perched	13–18	Well dry and no longer needed.
01MW61	ASKO	Shallow	22–37.5	Monitoring purpose (upgradient sentinel well) will be fulfilled by 01MW60R.
02MW01	EW	Shallow	10–20	Well has no specified monitoring purpose.
02MW18	EW	Shallow	4–14	Well has no specified monitoring purpose.
Proposed for Decommissioning in 2026				
01MW34	BT	Shallow	10–20	In right-of-way. To be decommissioned in 2026. Monitoring purpose fulfilled by 01MW36.
01MW39	BT	Shallow	7–22	Damaged during cleanup action and unusable. To be decommissioned during redevelopment (monitoring objective fulfilled by 01MW100 and 01MW40/01MW90R).
01MW40	BT	Shallow	7–22	To be decommissioned during redevelopment and replaced by 01MW90R.
01MW47	BT	Shallow	6–21	In right-of-way. To be decommissioned in 2026. Monitoring purpose fulfilled by 01MW19R.
01MW48	BT	Intermediate	28–32	In right-of-way. To be decommissioned in 2026. Monitoring purpose fulfilled by 01MW51.
01MW111	BT	Intermediate	30–35	To be decommissioned in 2026 (outside of TPH impacts).
01MW57	ASKO	Intermediate	35.5–40.5	To be decommissioned during redevelopment. Within redevelopment structure footprint.
01MW52	ASKO	Shallow	14–24	To be decommissioned in 2026. Monitoring purpose will be fulfilled by 01MW89.
02MW14	EW	Shallow	5–15	Overgrown by blackberry bramble; inaccessible. Will attempt to access and decommission in 2026.

Note:

Locations are listed alphanumerically and by property.

Abbreviations:

ASKO ASKO Hydraulic

BT Bulk Terminal

EW East Waterfront

penta Pentachlorophenol

Property The four parcels identified as "Bulk Terminal," "ASKO," "East Waterfront," and "West Waterfront"

TOC Top of casing

TPH Total petroleum hydrocarbons

Table A.2
Water Level Elevations (2024–2025)

Location and Measurement Date	TOC Elevation (ft NAVD 88)	Depth to Water (ft bTOC)	Water Level Elevation (ft NAVD 88)
Bulk Terminal			
01MW06			
2/26/2024	47.730	7.220	40.510
01MW12			
2/26/2024	45.780	1.270	44.510
5/15/2024		2.690	43.090
8/7/2024		7.520	38.260
3/3/2025		1.040	44.740
01MW19R			
2/26/2024	43.840	11.480	32.360
5/15/2024		12.460	31.380
8/7/2024		13.660	30.180
11/20/2024		11.510	32.330
3/3/2025		10.590	33.250
9/16/2025		13.380	30.460
01MW30			
2/26/2024	44.420	21.370	23.050
8/7/2024		22.220	22.200
01MW35			
9/16/2025	44.550	19.330	25.220
01MW40			
2/26/2024	49.010	9.980	39.030
5/15/2024		11.540	37.470
8/7/2024		14.880	34.130
3/3/2025		10.160	38.850
9/16/2025		15.440	33.570
01MW49R			
2/26/2024	45.200	25.960	19.240
8/7/2024		26.340	18.860
01MW66			
2/26/2024	47.330	4.500	42.830
5/15/2024		6.170	41.160
8/7/2024		9.710	37.620
3/3/2025		4.570	42.760
9/16/2025		10.910	36.420

Table A.2
Water Level Elevations (2024–2025)

Location and Measurement Date	TOC Elevation (ft NAVD 88)	Depth to Water (ft bTOC)	Water Level Elevation (ft NAVD 88)
Bulk Terminal (cont.)			
01MW84			
2/26/2024	43.620	14.890	28.730
5/15/2024		15.090	28.530
8/7/2024		15.510	28.110
11/20/2024		15.230	28.390
3/3/2025		14.460	29.160
9/16/2025		14.630	28.990
01MW100			
2/27/2024	63.680	21.210	42.470
5/15/2024		20.860	42.820
8/7/2024		22.590	41.090
3/3/2025		20.290	43.390
9/16/2025		23.180	40.500
01MW102			
2/26/2024	44.440	15.730	28.710
5/15/2024		15.960	28.480
8/7/2024		16.600	27.840
3/3/2025		14.340	30.100
9/16/2025		16.030	28.410
ASKO Hydraulic			
01MW15			
2/26/2024	50.830	18.870	31.960
5/15/2024		19.190	31.640
8/7/2024		19.590	31.240
3/3/2025		18.800	32.030
6/5/2025		18.980	31.850
9/16/2025		19.580	31.250
01MW46			
2/26/2024	46.680	21.960	24.720
5/15/2024		22.970	23.710
8/7/2024		23.680	23.000
11/20/2024		23.020	23.660
3/3/2025		22.100	24.580
9/16/2025		23.890	22.790

Table A.2
Water Level Elevations (2024–2025)

Location and Measurement Date	TOC Elevation (ft NAVD 88)	Depth to Water (ft bTOC)	Water Level Elevation (ft NAVD 88)
ASKO Hydraulic (cont.)			
01MW53R			
2/27/2024	43.350	21.530	21.820
5/15/2024		22.020	21.330
8/7/2024		23.290	20.060
11/20/2024		22.280	21.070
3/3/2025		21.740	21.610
6/5/2025		22.160	21.190
9/16/2025		22.520	20.830
12/3/2025		22.190	21.160
01MW56			
2/26/2024	44.500	19.260	25.240
5/15/2024		20.000	24.500
8/7/2024		20.690	23.810
3/3/2025		19.460	25.040
9/16/2025		20.850	23.650
01MW58R			
2/26/2024	53.660	25.590	28.070
5/15/2024		26.210	27.450
8/7/2024		26.650	27.010
11/20/2024		26.230	27.430
3/3/2025		25.580	28.080
6/5/2025		26.130	27.530
9/16/2025		26.740	26.920
12/3/2025		26.260	27.400
01MW61			
2/26/2024	58.930	26.740	32.190
5/15/2024		26.910	32.020
8/7/2024		27.200	31.730
3/3/2025		26.670	32.260
01MW80			
5/15/2024	44.830	22.520	22.310
8/7/2024		23.150	21.680
3/3/2025		22.200	22.630
9/16/2025		23.370	21.460

Table A.2
Water Level Elevations (2024–2025)

Location and Measurement Date	TOC Elevation (ft NAVD 88)	Depth to Water (ft bTOC)	Water Level Elevation (ft NAVD 88)
ASKO Hydraulic (cont.)			
01MW85			
2/27/2024	44.050	22.340	21.710
5/15/2024		22.930	21.120
8/7/2024		23.390	20.660
11/20/2024		23.380	20.670
3/3/2025		22.730	21.320
6/5/2025		23.020	21.030
9/16/2025		23.580	20.470
12/3/2025		23.290	20.760
01MW89			
2/27/2024	43.260	22.650	20.610
8/7/2024		23.450	19.810
3/3/2025		23.050	20.210
9/16/2025		23.580	19.680
01MW106			
2/26/2024	43.680	21.900	21.780
5/15/2024		22.580	21.100
3/3/2025		22.240	21.440
9/16/2025		22.890	20.790
01MW107			
2/26/2024	43.680	22.440	21.240
5/15/2024		23.100	20.580
8/7/2024		23.840	19.840
11/20/2024		23.920	19.760
3/3/2025		22.970	20.710
6/5/2025		23.420	20.260
9/16/2025		24.410	19.270
12/3/2025		24.000	19.680
01MW108			
2/26/2024	44.940	24.320	20.620
8/7/2024		25.170	19.770
MW01			
3/3/2025	46.440	21.720	24.720
MW02			
8/7/2024	46.730	24.090	22.640
3/3/2025		23.400	23.330

Table A.2
Water Level Elevations (2024–2025)

Location and Measurement Date	TOC Elevation (ft NAVD 88)	Depth to Water (ft bTOC)	Water Level Elevation (ft NAVD 88)
ASKO Hydraulic (cont.)			
MW05			
2/27/2024	45.820	19.950	25.870
5/15/2024		20.650	25.170
8/7/2024		21.130	24.690
3/3/2025		20.090	25.730
9/16/2025		21.230	24.590
MW06			
2/27/2024	45.760	21.140	24.620
5/15/2024		22.070	23.690
8/7/2024		22.600	23.160
3/3/2025		21.250	24.510
9/16/2025		22.710	23.050
Gravity Well			
5/15/2024	58.610	30.080	28.530
8/7/2024		30.460	28.150
11/20/2024		30.110	28.500
3/3/2025		29.480	29.130
6/5/2025		29.980	28.630
East Waterfront			
01MW83			
2/26/2024	42.670	20.840	21.830
5/15/2024		21.720	20.950
8/7/2024		22.320	20.350
3/3/2025		21.450	21.220
02MW04R			
2/27/2024	26.390	7.660	18.730
5/15/2024		7.360	19.030
8/7/2024		8.230	18.160
9/16/2025		8.260	18.130
02MW07			
2/27/2024	20.780	2.460	18.320
5/15/2024		2.130	18.650
8/7/2024		2.910	17.870
9/16/2025		3.550	17.230
02MW16			
2/27/2024	27.140	7.950	19.190
5/15/2024		7.750	19.390
8/7/2024		8.440	18.700

**Table A.2
Water Level Elevations (2024–2025)**

Location and Measurement Date	TOC Elevation (ft NAVD 88)	Depth to Water (ft bTOC)	Water Level Elevation (ft NAVD 88)
East Waterfront (cont.)			
02MW17			
9/16/2025	20.730	2.460	18.270
02MW18			
2/27/2024	23.980	5.000	18.980
5/15/2024		4.750	19.230
8/7/2024		5.730	18.250
02MW19			
2/27/2024	21.630	2.770	18.860
5/15/2024		2.850	18.780
8/7/2024		3.430	18.200
9/16/2025		4.210	17.420
02MW20R			
9/16/2025	22.130	5.250	16.880

Abbreviations:

- bTOC Below top of casing
- ft Feet
- NAVD 88 North American Vertical Datum of 1988

**Table A.3
2025 Short-Term Performance Monitoring Summary**

Well ID	Water-Bearing Zone	Screened Interval (feet bTOC)	Designation	Monitoring Schedule	2025 Monitoring Schedule								2025 Monitoring Schedule				Monitoring Schedule Notes
					MNA Parameters ⁽¹⁾	Indicator Hazardous Substances ⁽²⁾											
					Primary	Total Arsenic	GRO	Total DRO+ORO	Benzene	TCE	Vinyl Chloride	Penta	Q1	Q2	Q3	Q4	
Bulk Terminal Wells																	
01MW12	Shallow	4–19	CAA-1 Downgradient Plume	Semiannual	X		X	X	X				IHS	Decommissioned		This location was decommissioned as a BMP due to concerns about damage during redevelopment of Lot F.	
01MW19R	Shallow	10–20	CAA-2 Source Area	Semiannual	X		X	X	X				IHS		IHS	Decreased sampling frequency to semiannual in 2025.	
01MW40	Shallow	7–22	CAA-1 Source Area	Initial Semiannual	X		X	X	X				IHS		IHS	Continued semiannual monitoring in 2025 due to change in redevelopment plans. Three consecutive results meeting CULS for benzene after Q4 2025; discontinue benzene after Q1 2026.	
01MW66	Shallow	12–22	--	Annual	X							X	IHS				
01MW84	Shallow	17–23	CAA-2 Downgradient Plume	Semiannual	X		X	X	Q1				IHS		IHS	Continued semiannual monitoring in 2025 due to change in redevelopment plans. Three consecutive results meeting CULS achieved for benzene after Q1 2025.	
ASKO Wells																	
01MW15	Shallow	10–30	CAA-4 Source Area	Initial Semiannual	X					X	X		IHS	IHS	IHS	Contingency sample collected in Q2 at request of Ecology. Well retained due to change in redevelopment plans.	
01MW46	Shallow	13–28	CAA-4 Source Area	Semiannual	X				X	X	X		IHS		IHS	Well retained due to change in redevelopment plans.	
01MW53R	Shallow	17-27	CAA-4 Downgradient Plume	Quarterly	X					X	X		IHS	IHS	IHS	Retained quarterly frequency of monitoring in 2025 due to elevated CVOC concentrations and PlumeStop Barrier repairs.	
01MW58R	Shallow	24-34	CAA-4 Source Area	Quarterly	X			X		X	X		IHS	IHS	IHS	Total DRO+ORO removed from sampling plan after Q3 2025.	
01MW56	Shallow	16–26	CAA-4 Downgradient Plume	Semiannual	X				X	X	X		IHS		IHS		
01MW61	Shallow	22-37.5	CAA-4 Upgradient Sentinel	Annual	X		X	X	X	X	X		IHS	Decommissioned		Sampled prior to decommissioning at request of Ecology. Decommissioned in preparation for redevelopment.	
01MW85	Shallow	18–27	CAA-4 Downgradient Plume	Quarterly	X					X	X		IHS	IHS	IHS	Retained quarterly frequency of monitoring in 2025 due to elevated CVOC concentrations and PlumeStop Barrier repairs.	
01MW107	Shallow	17–27	CAA-4 Downgradient Sentinel	Contingency	X					X	X		IHS	IHS	IHS	Contingency sampling triggered in Q3 2023 and retained quarterly through 2025.	
MW01	Shallow	18-28	CAA-4 Downgradient Sentinel	Contingency	X		X	X	X	X	X		IHS	Decommissioned		Sampled prior to decommissioning at request of Ecology. Decommissioned in preparation for redevelopment.	
MW05	Shallow	19–29	CAA-4 Downgradient Plume	Initial Semiannual	X				X	X	X		IHS		IHS	Continued semiannual monitoring in 2025 due to change in redevelopment plans.	
MW06	Shallow	18–28	CAA-4 Downgradient Plume	Semiannual	X				X	X	X		IHS		IHS	Continued semiannual monitoring in 2025 due to change in redevelopment plans.	

Notes:

Blank cells are intentional.

1 Primary MNA parameters include field measurement of dissolved oxygen, oxidation–reduction potential, pH, conductivity, and temperature. Primary MNA parameters were collected during all sampling events specified in the short-term performance monitoring plan.

2 cis-1,2-Dichloroethene is considered a secondary MNA parameter per the GMP but was opportunistically analyzed at all locations where CVOCs are being monitored.

Abbreviations:

ASKO ASKO Hydraulic
 bgs Below ground surface
 bTOC Below top of casing
 BMP Best management practice
 CPOC Conditional point of compliance
 CUL Cleanup level
 CVOC Chlorinated volatile organic compound
 DRO Diesel-range organics

Ecology Washington State Department of Ecology
 GRO Gasoline-range organics
 IHS Indicator hazardous substance
 MNA Monitored natural attenuation
 ORO Oil-range organics
 penta Pentachlorophenol
 TCE Trichloroethene
 TOC Top of casing

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs			SVOCs	Conventionals					
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity	
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--	
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU	
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--	
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	
Parcel	Location	Sample Date												
Bulk Terminal	01MW12													
	Pre-remediation	4/30/2019	100 U	590 ⁽¹⁾	3.0									
	Post-remediation	1/31/2023	100 U	1,000 ⁽¹⁾	0.35 U				7.44	-22.2	6.61	586	10.8	3.44
		6/28/2023	110	1,200 ⁽¹⁾	1.3				0.10	-47.1	6.69	625	14.6	3.02
		2/26/2024	100 U	550 ⁽¹⁾	0.35 U				0.32	-99.4	6.65	432.7	11.0	3.03
		8/7/2024	100 U	1,300 ⁽¹⁾	0.35 U				0.22	-33.6	6.57	557	16.2	2.82
		3/3/2025	100 U	1,400 ⁽¹⁾	0.35 U				0.12	-64.4	7.90	239.6	10.9	4.86
	01MW19/01MW19R													
	Pre-remediation	4/30/2019	10,000	1,900 ⁽¹⁾	2,600	1.0 U	1.0 U	0.20 U						
	Post-remediation	1/31/2023	990	910 ⁽¹⁾	5.2				7.11	-63.4	6.92	217.3	14.6	1.11
		4/7/2023	1,100	700 ⁽¹⁾	4.4				2.16	-33.6	6.90	190.3	14.4	1.32
		6/28/2023	1,300	810 ⁽¹⁾	2.1				0.24	-84.6	7.08	216.2	16.3	0.61
		10/10/2023	1,200	890 ⁽¹⁾	1.6				0.28	10.4	6.79	173.4	15.7	0.87
			1,300	920 ⁽¹⁾	1.8									
		2/26/2024	560	600 ⁽¹⁾	1.9				0.37	-157.2	7.08	207.7	14.1	0.44
		5/15/2024	750	680 ⁽¹⁾	2.1				0.25	-98.1	6.93	184.80	15.0	0.34
			1,000	720 ⁽¹⁾	2.2									
		8/7/2024	500	580 ⁽¹⁾	0.98				0.27	-107	7.04	231.4	16.2	0.64
		11/20/2024	490	1,100 ⁽¹⁾	1.0				0.01	-184.7	7.12	221.7	15.2	1.51
	3/3/2025	500	510 ⁽¹⁾	1.1				0.18	-103.9	7.52	136.0	14.4	1.79	
	9/16/2025	750	730 ⁽¹⁾	1.1				0.72	34.0	7.11	255.3	16.5	0.31	
	01MW35													
	Pre-remediation	5/1/2019	100 U	550 ⁽¹⁾	0.35 UJ									
	Post-remediation	1/31/2023	100 U	110 ⁽¹⁾	0.35 U				2.17	175.6	6.41	190.1	12.6	0.79
		4/7/2023	100 U	120 ⁽¹⁾	0.35 U				2.86	66.6	6.23	203.5	13.0	0.45
		6/28/2023	100 U	76 ⁽¹⁾	0.35 U				0.41	82.5	6.39	160.7	14.8	0.50
		10/10/2023	100 U	56 ⁽¹⁾	0.35 U				0.68	97.1	6.38	77.2	18.6	2.04

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs		SVOCs	Conventionals							
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity		
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--		
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU		
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--		
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--		
Parcel	Location	Sample Date													
Bulk Terminal (cont.)	01MW40														
	Pre-remediation	4/30/2019		1,100 ⁽¹⁾	0.35 UJ										
	Post-remediation	1/31/2023	100 U	5,300 ⁽¹⁾	0.73				7.59	79.4	6.43	402.9	11.2	1.17	
		6/28/2023	100 U	620 ⁽¹⁾	0.35 U				0.11	14.2	6.68	431.8	15.2	1.89	
		2/26/2024	110	5,500 ⁽¹⁾	1.6				0.37	-33.3	6.55	406.5	11.0	0.63	
		8/7/2024	100 U	980 ⁽¹⁾	0.35 U				0.25	-41.7	6.68	526	15.2	0.65	
		3/3/2025	100 U	2,100 ⁽¹⁾	0.35 U				0.18	24.8	7.08	219.0	12.5	2.03	
		9/17/2025	100 U	760 ⁽¹⁾	0.35 U				1.30	-49.9	6.61	497.7	14.1	0.09	
	01MW49/01MW49R														
	Pre-remediation	5/1/2019	100 U	850 ⁽¹⁾	0.35 UJ										
	Post-remediation	1/31/2023	100 U	260 ⁽¹⁾	0.35 U				5.78	-95.4	7.06	914	14.3	3.03	
		6/29/2023	100 U	160 ⁽¹⁾	0.35 U				1.22	-110.8	7.14	828	15.2	1.32	
		2/26/2024	100 U	200 ⁽¹⁾	0.35 U				0.23	-136.7	7.00	828	14.0	0.36	
		8/7/2024	100 U	240 ⁽¹⁾	0.35 U				0.36	-104	7.08	855	15.7	1.87	
	01MW51														
	Pre-remediation	5/26/2016	370	1,800 ⁽¹⁾	1.0 U										
	Post-remediation	4/7/2023	100 U	250 U	0.35 U				2.64	-46.6	6.86	881	13.5	3.23	
	01MW66														
	Pre-remediation	4/30/2019	100 U	250	0.35 UJ				3.6						
	Post-remediation	1/31/2023							1.9	7.14	-9.1	6.58	356.5	12.5	4.79
		2/26/2024							0.76	0.36	-108.1	6.69	435.7	12.4	8.55
		3/3/2025							0.84	0.16	-91.1	7.19	203.6	12.6	15.49

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs			SVOCs	Conventionals						
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity		
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--		
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU		
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--		
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--		
Parcel	Location	Sample Date													
Bulk Terminal (cont.)	01MW84														
	Pre-remediation	5/1/2019	8,400	2,800 ⁽¹⁾	5.0 U										
	Post-remediation	1/31/2023	2,300	810 ⁽¹⁾	0.35 U				2.04	-49.5	6.61	81.4	12.8	2.10	
		4/7/2023	2,200	830 ⁽¹⁾	0.35 U				2.28	11.9	6.57	72.0	12.6	2.21	
		6/28/2023	5,500	1,500 ⁽¹⁾	0.35 U				0.20	-18.6	6.51	86.8	14.5	11.83	
		10/10/2023	4,600	1,400 ⁽¹⁾	0.35 U				0.26	50.8	6.46	84.3	16.7	3.77	
		2/26/2024	4,300	1,300 ⁽¹⁾	0.35 U				0.35	120.9	6.74	82.2	12.8	1.08	
		5/15/2024	3,500	1,500 ⁽¹⁾	0.35 U				0.24	-56.0	6.68	73.3	13.5	1.77	
		8/7/2024	2,500	970 ⁽¹⁾	0.35 U				0.27	-58.1	6.69	105.2	16.4	1.24	
		11/20/2024	1,800	1,200 ⁽¹⁾	0.35 U				0.01	-115.3	6.77	102.3	17.1	2.00	
		3/3/2025	1,800	1,200 ⁽¹⁾	0.35 U				0.19	-81.7	7.24	46.7	12.5	2.30	
		9/16/2025	960	440 ⁽¹⁾	0.35 U				0.69	40.2	6.75	151.0	20.3	1.15	
	9/16/2025	1,400	690 ⁽¹⁾												
	9/16/2025	1,300	710 ⁽¹⁾												
Bulk Terminal (cont.)	01MW87														
	Pre-remediation	5/1/2019		110											
		5/26/2019	100 U		1.0 U										
Post-remediation	4/7/2023	100 U	250 U	0.35 U				5.12	86.0	6.26	190.8	12.6	3.95		
ASKO	01MW15														
	Pre-remediation	5/2/2019	100 U	220 ⁽¹⁾	0.41	0.50 U	1.7	7.2							
	Post-remediation	2/1/2023				0.50 U	6.4	36		6.26	-29.8	6.85	422.1	14.4	1.14
		6/28/2023				0.50 U	5.7	28		0.23	-50.3	7.06	591	15.4	0.93
		2/26/2024				27	88	59		0.29	-75.4	6.72	480.6	13.5	0.68
		5/15/2024				2.7	18	58		0.18	-45.8	6.69	451.6	14.7	0.33
		8/7/2024				0.59	8.9	36		0.32	-92.0	6.98	640	15.1	1.86
		3/3/2025				7.4	41	110		1.59	73.0	6.69	335.8	13.0	3.62
		6/5/2025				1.0	9.0	89		0.36	5.6	6.75	520	14.4	0.50
9/16/2025					0.99	16	35		0.88	-87.1	7.02	631	15.1	2.26	

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs			SVOCs	Conventionals						
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity		
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--		
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU		
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--		
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--		
Parcel	Location	Sample Date													
ASKO (cont.)	01MW46														
	Pre-remediation	5/2/2019		280 ⁽¹⁾	14	880	220	11							
	Post-remediation	2/1/2023			3.8	240	140	17		1.71	-113.2	7.27	358.3	14.8	1.04
		4/7/2023			3.5 U	140	110	9.3		2.68	-38.9	6.75	332.6	15.5	1.32
		6/28/2023			4.3	280	260	25		0.19	-68.9	7.21	490.9	15.4	2.44
		10/10/2023			4.8	300	400	36		0.20	3.7	6.74	366.2	14.9	5.70
		2/26/2024			3.1	220	520	69		0.16	-128	7.23	399.1	14.7	0.83
		5/15/2024			2.8 J	220	490	69		0.22	-53.5	7.12	372.1	14.9	0.78
		8/7/2024			3.1 J	160	610	96		0.36	-133.9	7.03	475.4	15.0	1.31
		11/20/2024			3.5 U	130	770	160		0.44	-109.2	6.99	636	14.5	3.06
		3/3/2025			3.5 U	130	550	130		1.21	10.2	7.16	353.0	13.9	3.26
	9/16/2025			3.5 U	45	580	220		1.15	-109.1	7.34	450.9	15.3	2.43	
	01MW53/01MW53R														
	Pre-remediation	5/2/2019		94 ⁽¹⁾	0.35 U	0.50 U	4.4	0.26							
	Post-remediation	2/1/2023				2.9	5.4	0.57		5.31	0.1	6.60	599	14.1	27.9
		4/7/2023				2.1	3.2	0.36		6.07	-56.1	6.78	640	13.3	41.5
		6/28/2023				2.0	2.9	0.51		0.19	-24.6	6.69	729	15.8	5.54
		10/10/2023				1.5	2.4	0.59		0.23	-12.5	6.57	528	16.3	6.86
		2/27/2024				26	2.9	0.60		0.28	-68.4	6.63	567	13.5	0.98
		5/15/2024				12	1.6	0.33		0.35	-51.0	6.41	505	14.4	2.12
		8/8/2024				13	2.0	0.76		0.28	-9.2	6.67	697	15.7	2.46
		11/20/2024				15	2.2	0.41		0.45	-70.9	6.65	637	14.5	2.47
		3/3/2025				22	2.2	0.38		0.19	-17.4	7.07	306.8	13.7	2.41
		6/5/2025				22	3.4	4.5		0.45	91.7	6.46	585	14.8	1.43
	9/16/2025				17	2.8	6.3		0.90	142.0	6.52	594	15.2	0.88	
	12/3/2025				20	3.3	6.9		1.20	6.9	6.78	473.7	14.9	2.66	
	01MW56														
	Pre-remediation	5/2/2019		1,000 ⁽¹⁾	0.35 U	0.50 U	1.0 U	0.61							
	Post-remediation	2/1/2023				0.81	1.0 U	0.99		6.74	-9.5	6.66	568	14.6	2.11
		6/28/2023				0.62	1.0 U	0.97		0.17	20.1	6.69	702	14.7	1.83
		2/26/2024				2.1	1.0 U	1.1		0.25	-13.9	6.60	583	14.2	0.45
		8/7/2024				0.97	1.0 U	1.2		0.24	21.6	6.61	669	16.4	0.79
		3/3/2025				3.7	1.1	1.4		1.32	114.1	6.52	416.9	14.2	3.55
9/16/2025					0.72	1.0 U	1.6		0.82	-40.5	6.72	595	15.7	1.78	

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs			SVOCs	Conventionals						
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity		
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--		
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU		
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--		
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--		
Parcel	Location	Sample Date													
ASKO (cont.)	01MW58/01MW58R														
	Pre-remediation	5/2/2019		100 ⁽¹⁾		42	1.6	0.30							
	Post-remediation	2/27/2024				40	520	31		0.25	-137.2	7.39	423.3	13.6	3.62
		5/15/2024				38	490	33		0.26	-97.4	7.23	367.4	14.7	1.90
		8/7/2024			1,300 ⁽¹⁾	23	270	13		0.39	-132.6	7.30	517	15.1	1.50
		11/20/2024			570 ⁽¹⁾	92	200	24		0.53	-130.3	7.26	637	13.5	2.60
		3/3/2025			770 ⁽¹⁾	340	380	75		1.31	-43.3	7.23	373.9	13.4	4.56
					1,000 ⁽¹⁾	380	390	79							
		6/5/2025			530 ⁽¹⁾	290	510	92		1.63	-97.2	7.25	462.6	14.5	0.13
					690 ⁽¹⁾	280	490	90							
	9/16/2025			500 ⁽¹⁾	380	310	54		1.19	-118.9	7.31	638	15.6	1.59	
	12/3/2025				410	230	49		1.46	-6.8	7.23	465.4	13.5	0.40	
	01MW61														
	Post-remediation	3/3/2025		470 ⁽¹⁾	0.35 U	0.050 U	1.0 U	0.020 U		1.28	-31.3	7.20	425.2	12.7	4.20
	01MW80														
	Pre-remediation	5/2/2019		380 ⁽¹⁾	16	710	250	10							
	Post-remediation	5/15/2024				190	350	51		0.33	-48.7	6.68	347.30	15.1	1.21
		8/8/2024			2.4 J	180	350	65		0.33	-80.6	6.88	486.60	14.4	1.18
	01MW85														
	Pre-remediation	5/3/2019		450 ⁽¹⁾		0.50 U	2.4	7.9							
	Post-remediation	1/31/2023				5.7	1,200	13		2.41	-57.7	6.89	577	14.9	3.32
		4/7/2023				6.2	1,200	17		5.50	-87.8	7.05	596	14.9	1.67
		6/28/2023				110	1,000	13		0.11	-59.7	6.98	619	15.3	2.59
		10/10/2023				13	1,100	18		0.29	34.5	6.78	475.9	14.9	1.10
		2/27/2024				5.0 U	990	28		0.24	-83.6	6.89	513	14.1	0.36
		5/15/2024				6.2	970	26		0.36	-73.4	6.82	472.6	14.9	1.00
		8/8/2024				6.5	1,100	33		0.25	-53.1	6.94	662	15.3	1.04
		11/20/2024				5.0	990	36		0.43	-101	6.94	653	14.8	1.61
3/3/2025					4.7	1,200	42		0.20	-85.8	7.42	301.8	14.8	1.65	
6/5/2025					4.9	1,200	46		1.61	-65.2	6.87	654	14.9	0.02	
9/16/2025					4.4	1,200	61		0.69	40.7	6.87	564	15.4	0.54	
12/3/2025				4.0	1,100	65		1.15	-20.5	7.00	450.2	15.0	0.74		

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs			SVOCs	Conventionals						
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity		
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--		
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU		
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--		
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--		
Parcel	Location	Sample Date													
ASKO (cont.)	01MW89														
	Pre-remediation	5/16/2016		350 ⁽¹⁾	1.0 U	1.0 U	1.0 U	0.020 U							
	Post-remediation	2/27/2024				0.50 U	1.0 U	0.020 U		0.48	59.0	6.37	649	14.4	1.16
	01MW106														
	Pre-remediation	5/3/2019				0.50 U	1.0 U	0.20 U							
	01MW107														
	Pre-remediation	5/6/2019				0.50 U	1.0 U	0.020 U							
	Post-remediation	6/28/2023				0.50 U	1.0 U	0.020 U		0.93	100.2	6.22	320.2	15.4	2.41
		10/10/2023				0.50 U	1.0 U	0.020 U		1.00	73.7	6.14	236.9	14.7	0.94
		2/26/2024				0.50 U	1.0 U	0.020 U		1.50	126.9	6.11	313.4	13.7	0.62
		5/15/2024				0.50 U	1.0 U	0.020 U		1.18	75.0	6.09	268.8	14.7	2.34
		8/8/2024				0.50 U	1.0 U	0.020 U		0.92	130.9	6.15	349.8	15.0	1.97
		11/20/2024				0.50 U	1.0 U	0.020 U		0.57	123.3	6.27	329	13.8	6.68
		3/3/2025				0.070	1.0 U	0.020 U		0.97	203.9	6.53	189.1	13.8	1.66
		6/5/2025				0.057	1.0 U	0.020 U		2.32	336.0	6.01	348.5	14.3	0.10
	9/16/2025				0.097	1.0 U	0.020 U		1.35	76.3	6.25	443.9	16.8	0.59	
	12/5/2025				0.064	1.0 U	0.020 U		1.76	88.0	6.31	456.1	14.3	0.72	
	01MW108														
	Pre-remediation	5/3/2019				0.50 U	1.0 U	0.33							
	Post-remediation	2/1/2023				0.50 U	1.0 U	0.27		1.43	-81.0	6.93	569	14.2	10.17
		6/29/2023				0.50 U	1.0 U	0.065		1.43	-86.4	7.02	697	15.3	4.40
		2/26/2024				0.50 U	1.0 U	0.11		0.22	-112.1	6.89	590	14.1	7.00
		8/7/2024				0.50 U	1.0 U	0.081		0.33	-124.8	7.00	663	15.8	4.76
	MW01														
	Post-remediation	3/3/2025		140 ⁽¹⁾	0.35 U	0.050 U	1.0 U	0.020 U		1.57	-59.4	7.28	421.4	12.1	2.49
	MW05														
	Pre-remediation	5/3/2019	140	310 ⁽¹⁾	1.0	240	120	27							
	Post-remediation	2/1/2023			1.4	140	360	6.8		6.49	-82.1	7.17	392.3	12.9	0.68
		6/28/2023			1.5 J	160	360	6.9		0.13	-84.6	7.29	576	14.0	1.99
		2/27/2024			1.1 J	120	840	24		0.49	-125.1	7.22	399.4	12.0	1.66
8/8/2024				0.83 J	51	840	81		0.32	-136.5	7.38	520	14.1	1.25	
3/3/2025				3.5 U	23	680	110		1.36	-66.2	7.45	310.7	13.2	3.16	
9/16/2025				3.5 U	12	750	160		1.04	-125.0	7.44	497.9	15.5	2.42	

Table A.4
Short-Term Performance Monitoring Results

Analyte Class		TPH		VOCs	CVOCs			SVOCs	Conventionals						
Analyte	GRO	Total DRO+ORO	Benzene	TCE	cis-1,2-DCE	Vinyl Chloride	Penta	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity		
CAS No.	--	--	71-43-2	79-01-6	156-59-2	75-01-4	87-86-5	--	--	pH	--	--	--		
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU		
Cleanup Level	800	500	0.44	0.50	--	0.20	0.20	--	--	--	--	--	--		
Natural Background Level ⁽²⁾	--	--	--	--	--	--	--	--	--	--	--	--	--		
Parcel	Location	Sample Date													
ASKO (cont.)	MW06														
	Pre-remediation	5/3/2019		370 ⁽¹⁾	2.6	330	31	2.8							
	Post-remediation	2/1/2023			0.35 U	0.50 U	1.0 U	2.6		1.97	-55.2	6.84	459.9	14.1	7.51
		2/27/2024			0.35 U	7.7	68	4.5		0.31	-64.1	6.69	522	13.0	2.99
		8/8/2024			0.35 U	48	50	2.1		0.33	-83.8	7.00	560	14.7	3.36
		3/3/2025			<i>3.5 U</i>	410	99	3.6		1.15	6.9	6.79	422.2	13.5	5.54
9/16/2025			<i>3.5 U</i>	260	130	2.6		0.73	33.1	6.92	464.2	16.0	5.86		

Notes:

Blanks are intentional. Data not collected or not available for specific analyte.

-- Not available.

Italic Reporting limit exceeds cleanup level.

BOLD Detected exceedance of cleanup level.

¹ Laboratory noted that the sample chromatographic pattern does not resemble the fuel standard used for quantitation for one or more of the detected concentrations in the sum.

Abbreviations:

- CAS Chemical Abstracts Service
- CVOC Chlorinated volatile organic compound
- DCE cis-1,2-Dichloroethene
- DRO Diesel-range organics
- GRO Gasoline-range organics
- µg/L Micrograms per liter
- µS/cm Microseimens per centimeter
- mg/L Milligrams per liter
- mV Millivolts
- NTU Nephelometric turbidity units
- ORO Oil-range organics
- ORP Oxidation-reduction potential
- penta Pentachlorophenol
- SVOC Semivolatile organic compound
- TCE Trichloroethene
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

Qualifiers:

- J Analyte was detected; concentration is an estimate.
- U Analyte was not detected at the given reporting limit.
- UJ Analyte was not detected at the given reporting limit, which is considered estimated.

**Table A.5
PRB Vaults and Gravity Well Grab Sample Results**

		Analyte Class	TPH	CVOCs		
		Analyte	Total DRO+ORO	TCE	DCE	Vinyl Chloride
		CAS No.	71-55-6	79-01-6	156-59-2	75-01-4
		Unit	µg/L	µg/L	µg/L	µg/L
		Cleanup Level	500	0.50	--	0.20
Parcel	Location	Sample Date				
ASKO	Gravity Well	10/10/2023		490	130	11
		11/9/2023		370	98	21
		2/26/2024		110	23	27
		5/15/2024		700	610	260
		8/7/2024	380 ⁽¹⁾	840	540	6.3
		11/20/2024		370	410	35
		3/3/2025		16	2.6	0.63
		6/5/2025	220 ⁽¹⁾	250	240	2.3
		9/16/2025		170	330	5.9
	Clear Vault	11/9/2023		31	1.4	0.058
		2/26/2024		17	1.0 U	0.020 U
		5/15/2024		13	1.0 U	0.020 U
		8/7/2024		9.2	1.0 U	0.020 U
		11/20/2024		11 J	1.4	0.020 U
		3/3/2025		7.3	1.0 U	0.020 U
		6/5/2025		5.5	1.0 U	0.020 U
	Influent Vault	2/26/2024		40	3.6	0.15
		5/15/2024		25	4.2	0.16
		8/7/2024		26	4.6	0.18
		11/20/2024		14	4.9	0.22
		3/3/2025		91	2.0	0.081
6/5/2025			44	4.1	0.15	

Notes:

Blanks are intentional. Data not collected or not available for specific analyte.

-- Not available.

BOLD Detected exceedance of cleanup level.

1 Laboratory noted that the sample chromatographic pattern does not resemble the fuel standard used for quantitation for one or more of the detected concentrations in the sum.

Abbreviations:

CVOC Chlorinated volatile organic compound

DCE cis- 1,2-Dichloroethene

DRO Diesel-range organics

µg/L Micrograms per liter

ORO Oil-range organics

TCE Trichloroethene

TPH Total petroleum hydrocarbons

Qualifiers:

J Analyte was detected; concentration is an estimate.

UJ Analyte was not detected at the given reporting limit, which is considered estimated.

**Table A.6
2025 Long-Term Compliance Monitoring Summary**

Well ID	Water-Bearing Zone	Screened Interval (feet bTOC)	Designation	Monitoring Schedule	2025 Monitoring Schedule								2025 Monitoring Schedule				Monitoring Schedule Notes
					MNA Parameters ⁽¹⁾	Indicator Hazardous Substances ⁽²⁾							Q1	Q2	Q3	Q4	
						Primary	Total Arsenic	GRO	Total DRO+ORO	Benzene	TCE	Vinyl Chloride					
East Waterfront Wells																	
02MW04R	Shallow	5–15	CAA-6 Source Area	Annual	X		X	X	X					IHS		Began long-term compliance monitoring in 2025.	
02MW07	Shallow	1.5–11.5	CAA-6 Downgradient Plume	Annual	X	X	X	X	X					IHS		Began long-term compliance monitoring in 2025.	
02MW17	Shallow	1–11	CAA-6 Downgradient Plume	Annual	X	X	X	X	X					IHS		Began long-term compliance monitoring in 2025.	
02MW19	Shallow	3–13	CAA-6 Downgradient Sentinel	Annual	X	X	X	X	X					IHS		Began long-term compliance monitoring in 2025.	
02MW20R	Shallow	2.5–12.5	CAA-6 Source Area	Annual	X	X	X	X	X					IHS		Began long-term compliance monitoring in 2025.	

Notes:

Blank cells are intentional.

1 Primary MNA parameters include field measurement of dissolved oxygen, oxidation–reduction potential, pH, conductivity, and temperature. Primary MNA parameters were collected during all sampling events specified in the long-term performance monitoring plan.

2 cis-1,2-Dichloroethene is considered a secondary MNA parameter per the GMP but was opportunistically analyzed at all locations where CVOCs are being monitored.

Abbreviations:

- bTOC Below top of casing
- CAA Cleanup Action Area
- CVOC Chlorinated volatile organic compound
- DRO Diesel-range organics
- GMP Groundwater Monitoring Plan
- GRO Gasoline-range organics
- IHS Indicator hazardous substance
- MNA Monitored natural attenuation
- ORO Oil-range organics
- penta Pentachlorophenol
- TCE Trichloroethene

Table A.7
Long-Term Compliance Monitoring Results

Analyte Class		Total Metals	TPH		VOCs	Field Parameters						
Analyte		Arsenic	GRO	Total DRO+ORO	Benzene	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity	
CAS No.		7440-38-2	--	--	71-43-2	--	--	pH	--	--	--	
Unit		µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU	
Cleanup Level		5.0 ⁽¹⁾	800	500	0.44	--	--	--	--	--	--	
Natural Background Level ⁽²⁾		8.0	--	--	--	--	--	--	--	--	--	
Parcel	Location	Sample Date										
East Waterfront	02MW04/02MW04R											
	Pre-remediation	5/18/2016		3,100	2,000 ⁽¹⁾	19						
		5/3/2019				3.7						
	Post-remediation	2/1/2023		100 U	69 ⁽³⁾	0.35 U	4.52	32.1	6.85	262	9.2	3.22
		4/7/2023		100 U	250 U	0.35 U	5.25	84.5	6.76	237.2	8.4	1.82
		6/29/2023		100 U	65 ⁽³⁾	29	3.25	50.8	6.82	352.6	15.4	1.52
		10/10/2023		100 U	250 U	0.35 U	1.04	99.9	6.76	298.1	16.9	1.52
		2/27/2024		100 U	250 U	0.35 U	0.77	50.4	6.76	254.1	9.6	0.68
				100 U	250 U	0.35 U						
		5/15/2024		100 U	52 ⁽³⁾	0.35 U	4.37	63.6	6.75	253.3	12.9	0.84
		8/7/2024		100 U	96 ⁽³⁾	0.35 U	3.8	81.3	6.86	323.5	17.5	2.13
	9/17/2025		100 U	200 U	0.35 U	2.92	119.6	6.90	253.9	18.9	0.45	
	02MW07											
	Pre-remediation	5/19/2016		100 U	160 ⁽¹⁾	1.0 U						
		5/3/2019	4.2		670 ⁽³⁾							
		7/25/2019	3.9									
	Post-remediation	2/1/2023	1.0 U	100 U	86 ⁽³⁾	0.35 U	4.96	74.8	6.36	312.1	9.8	1.81
		4/7/2023	1.0 U	100 U	250 U	0.35 U	3.19	126.2	6.10	373.6	9.8	2.04
		6/29/2023	1.1	100 U	76 ⁽³⁾	0.35 U	2.52	91.1	6.04	844	16.5	1.57
		10/10/2023	1.2	100 U	73 ⁽³⁾	0.35 U	0.79	89.6	5.92	536	17.3	0.86
		2/27/2024	1.0 U	100 U	250 U	0.35 U	0.7	133.8	6.29	293.8	9.2	2.48
9/17/2025		3.9	100 U	95 ⁽³⁾	0.35 U	1.35	92.8	6.19	426.1	19.3	1.96	
02MW17												
Pre-remediation	5/6/2019	1.8	100 U	220 ⁽³⁾	0.35 UJ							
Post-remediation	9/17/2025	1.0 U	100 U	200 U	0.35 U	2.38	63.7	6.89	293.3	18.4	4.97	

Table A.7
Long-Term Compliance Monitoring Results

Analyte Class		Total Metals	TPH		VOCs	Field Parameters						
Analyte		Arsenic	GRO	Total DRO+ORO	Benzene	Dissolved Oxygen	ORP	pH	Specific Conductance	Temperature	Turbidity	
CAS No.		7440-38-2	--	--	71-43-2	--	--	pH	--	--	--	
Unit		µg/L	µg/L	µg/L	µg/L	mg/L	mV	pH	µS/cm	°C	NTU	
Cleanup Level		5.0 ⁽¹⁾	800	500	0.44	--	--	--	--	--	--	
Natural Background Level ⁽²⁾		8.0	--	--	--	--	--	--	--	--	--	
Parcel	Location	Sample Date										
East Waterfront (cont.)	02MW19											
	Pre-remediation	5/6/2019	23	100 U	380 ⁽²⁾							
		7/25/2019	14									
	Post-remediation	2/1/2023	3.3	100 U	150 ⁽³⁾	0.35 U	3.24	4.9	6.42	387.2	11.4	3.86
		4/7/2023	4.7	100 U	76 ⁽³⁾	0.35 U	3.62	-21.9	6.54	440.3	11.4	2.86
			4.8	100 U	84 ⁽³⁾	0.35 U						
		6/29/2023	4.2	100 U	76 ⁽³⁾	0.35 U	0.17	-6.8	6.50	576	14.1	1.68
		10/10/2023	3.1	100 U	81 ⁽³⁾	0.35 U	0.16	-16.5	6.48	338.9	15.7	1.87
		2/27/2024	4.8	100 U	110 ⁽³⁾	0.35 U	0.4	-48.9	6.43	441.9	10.8	2.12
	9/17/2025	3.8	100 U	91 ⁽³⁾	0.35 U	0.86	104.3	6.53	418.9	16.5	4.36	
	02MW20/02MW020R											
	Pre-remediation	5/6/2019	6.7	100 U	210 ⁽³⁾	0.35 UJ						
		7/25/2019	12									
	Post-remediation	9/17/2025	7.3	100 U	170 ⁽³⁾	0.35 U	1.01	-66.2	6.67	471.1	16.8	0.02

Notes:

Blanks are intentional. Data not collected or not available for specific analyte.
 -- Not available.

BOLD Detected exceedance of cleanup level.

- 1 The arsenic cleanup level was originally established in the Cleanup Action Plan (Ecology 2020) and is based on the former natural background value.
- 2 The revised Puget Sound Basin background arsenic value was established by the Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022).
- 3 Laboratory noted that the sample chromatographic pattern does not resemble the fuel standard used for quantitation for one or more of the detected concentrations in the sum.

Abbreviations:

- | | |
|--|------------------------------------|
| CAS Chemical Abstracts Service | NTU Nephelometric turbidity units |
| CVOC Chlorinated volatile organic compound | ORO Oil-range organics |
| DCE cis-1,2-Dichloroethene | ORP Oxidation-reduction potential |
| DRO Diesel-range organics | penta Pentachlorophenol |
| GRO Gasoline-range organics | SVOC Semivolatile organic compound |
| µg/L Micrograms per liter | TCE Trichloroethene |
| µS/cm Microseimens per centimeter | TPH Total petroleum hydrocarbons |
| mg/L Milligrams per liter | VOC Volatile organic compound |
| mV Millivolts | |

Qualifiers:

- J Analyte was detected; concentration is an estimate.
- U Analyte was not detected at the given reporting limit.
- UJ Analyte was not detected at the given reporting limit, which is considered estimated.

**Long-Term Compliance Monitoring
Annual Report Appendix A:
2025 Groundwater Monitoring Annual Report**

Time Oil Bulk Terminal

Figures

Existing Monitoring Well Locations

- Shallow WBZ Monitoring Well
- Intermediate WBZ Monitoring Well
- Perched WBZ Monitoring Well
- Monitoring Wells Decommissioned in 2025
- To be Decommissioned

Cleanup Action Components

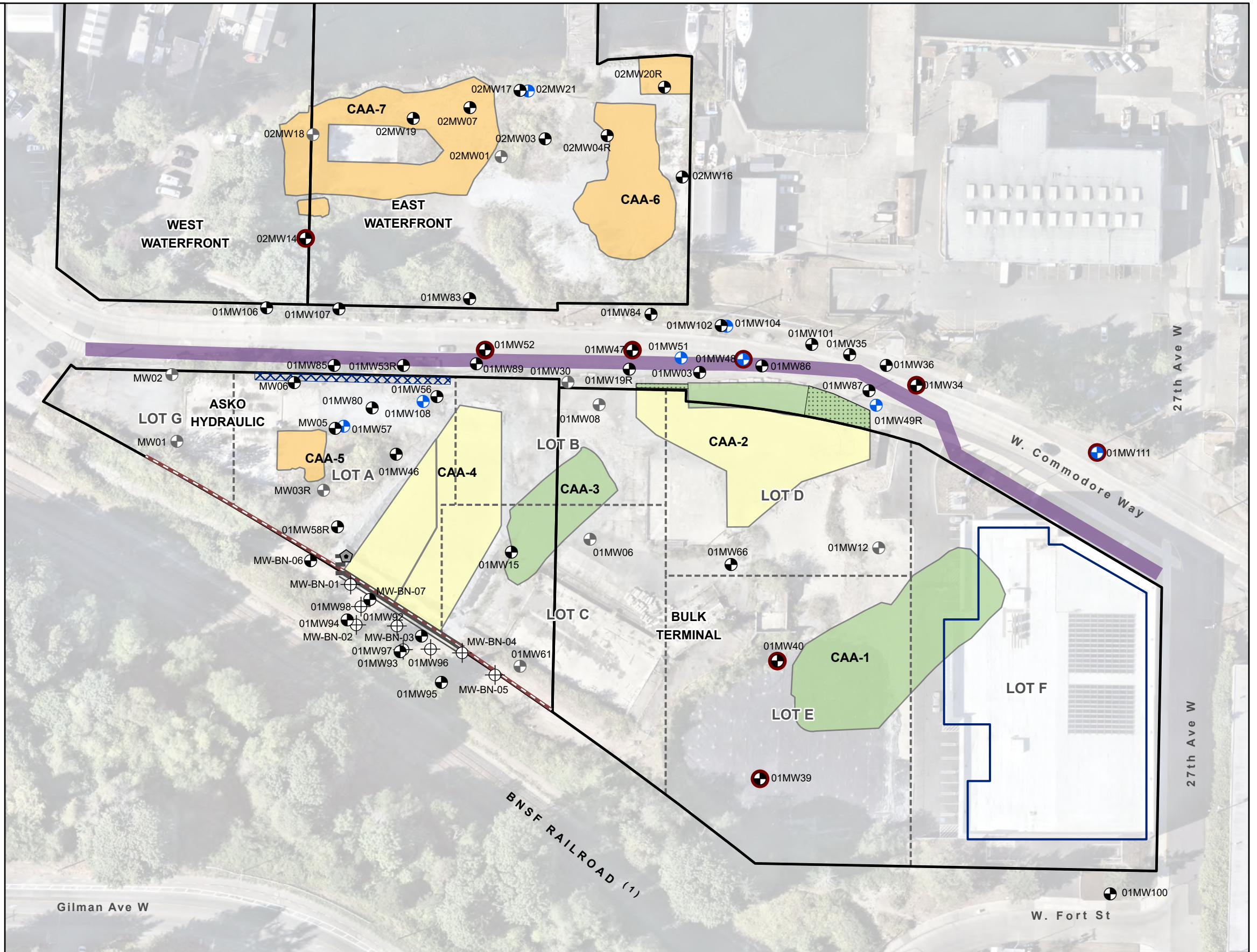
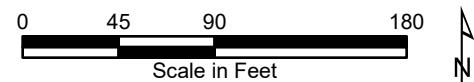
- Excavated to CULs
- Excavated to RELs
- In Situ Stabilization/Solidification
- PlumeStop Injection
- ORC-A Treatment
- Interceptor Trench
- PRB Wall for Trench
- Gravity Well

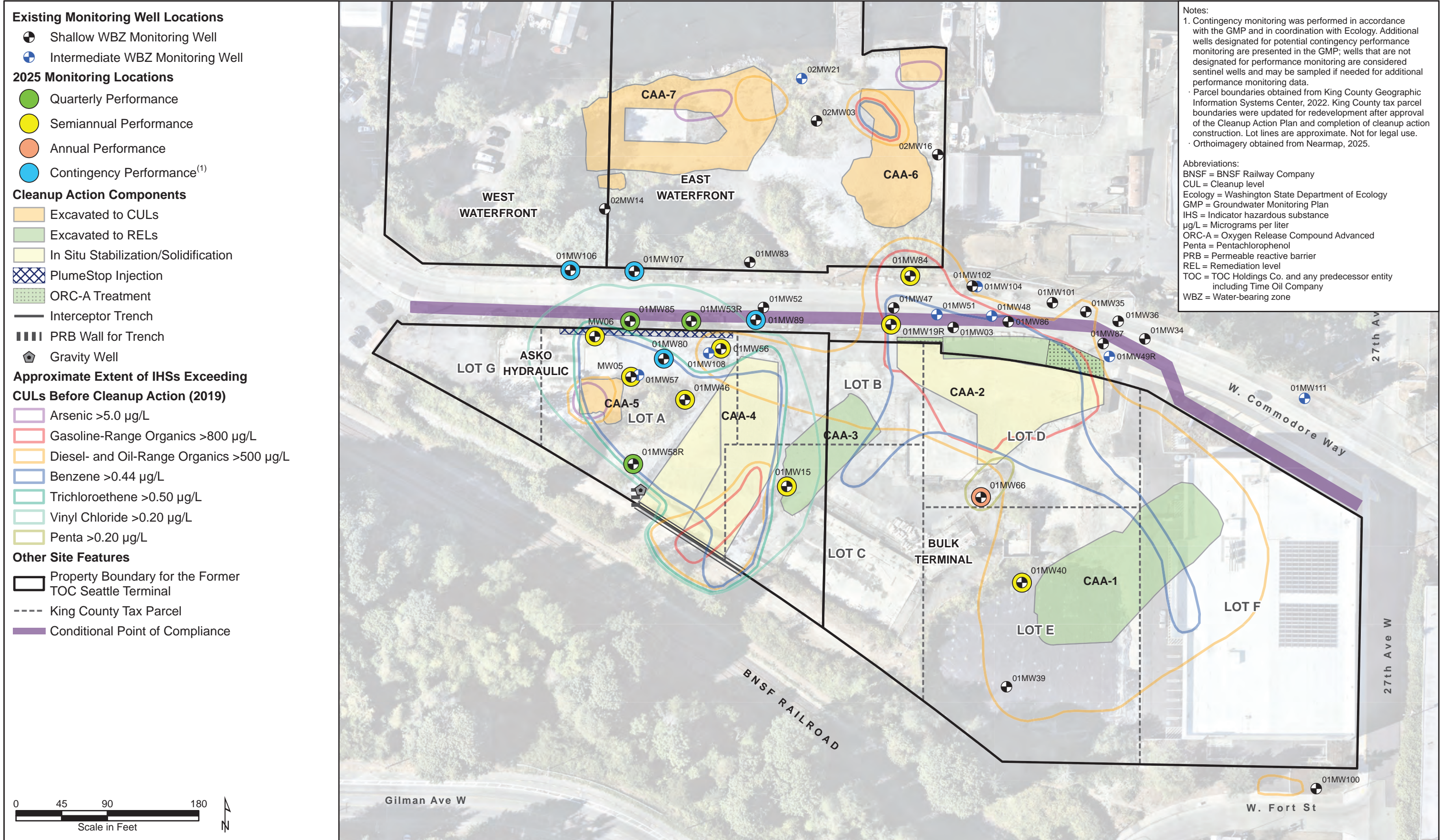
Other Site Features

- Property Boundary for the Former TOC Seattle Terminal
- Existing Structure
- King County Tax Parcel
- Conditional Point of Compliance
- Existing Retaining Wall

Notes:
 1. Remedial Investigation on the BNSF parcel upgradient of ASKO is in progress under a separate Agreed Order with Ecology.
 - Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
 - Orthoimagery obtained from Nearmap, 2025.

Abbreviations:
 ASKO = ASKO Hydraulic Ecology
 BNSF = BNSF Railway Company
 CAA = Cleanup action area
 CUL = Cleanup level
 ORC-A = Oxygen Release Compound Advanced
 PRB = Permeable reactive barrier
 REL = Remediation level
 TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
 WBZ = Water-bearing zone





Notes:

- Contingency monitoring was performed in accordance with the GMP and in coordination with Ecology. Additional wells designated for potential contingency performance monitoring are presented in the GMP; wells that are not designated for performance monitoring are considered sentinel wells and may be sampled if needed for additional performance monitoring data.
- Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
- Orthoimagery obtained from Nearmap, 2025.

Abbreviations:

- BNSF = BNSF Railway Company
- CUL = Cleanup level
- Ecology = Washington State Department of Ecology
- GMP = Groundwater Monitoring Plan
- IHS = Indicator hazardous substance
- µg/L = Micrograms per liter
- ORC-A = Oxygen Release Compound Advanced
- Penta = Pentachlorophenol
- PRB = Permeable reactive barrier
- REL = Remediation level
- TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
- WBZ = Water-bearing zone

- Existing Monitoring Well Locations**
- Shallow WBZ Monitoring Well
 - Intermediate WBZ Monitoring Well
- 2025 Monitoring Locations**
- Quarterly Performance
 - Semiannual Performance
 - Annual Performance
 - Contingency Performance⁽¹⁾

- Cleanup Action Components**
- Excavated to CULs
 - Excavated to RELs
 - In Situ Stabilization/Solidification
 - PlumeStop Injection
 - ORC-A Treatment
 - Interceptor Trench
 - PRB Wall for Trench
 - Gravity Well

- Approximate Extent of IHSs Exceeding CULs Before Cleanup Action (2019)**
- Arsenic >5.0 µg/L
 - Gasoline-Range Organics >800 µg/L
 - Diesel- and Oil-Range Organics >500 µg/L
 - Benzene >0.44 µg/L
 - Trichloroethene >0.50 µg/L
 - Vinyl Chloride >0.20 µg/L
 - Penta >0.20 µg/L

- Other Site Features**
- Property Boundary for the Former TOC Seattle Terminal
 - King County Tax Parcel
 - Conditional Point of Compliance



I:\GIS\Projects\Cantera-TOC\01-Tasks\06-Groundwater Monitoring\01-LTCMP AND GMP\Appendix A 2025\2025 Annual Report.aprx
2/9/2026

Existing Monitoring Well Locations

- Shallow WBZ Monitoring Well

2025 Compliance Monitoring Locations

- Annual Compliance

Cleanup Action Components

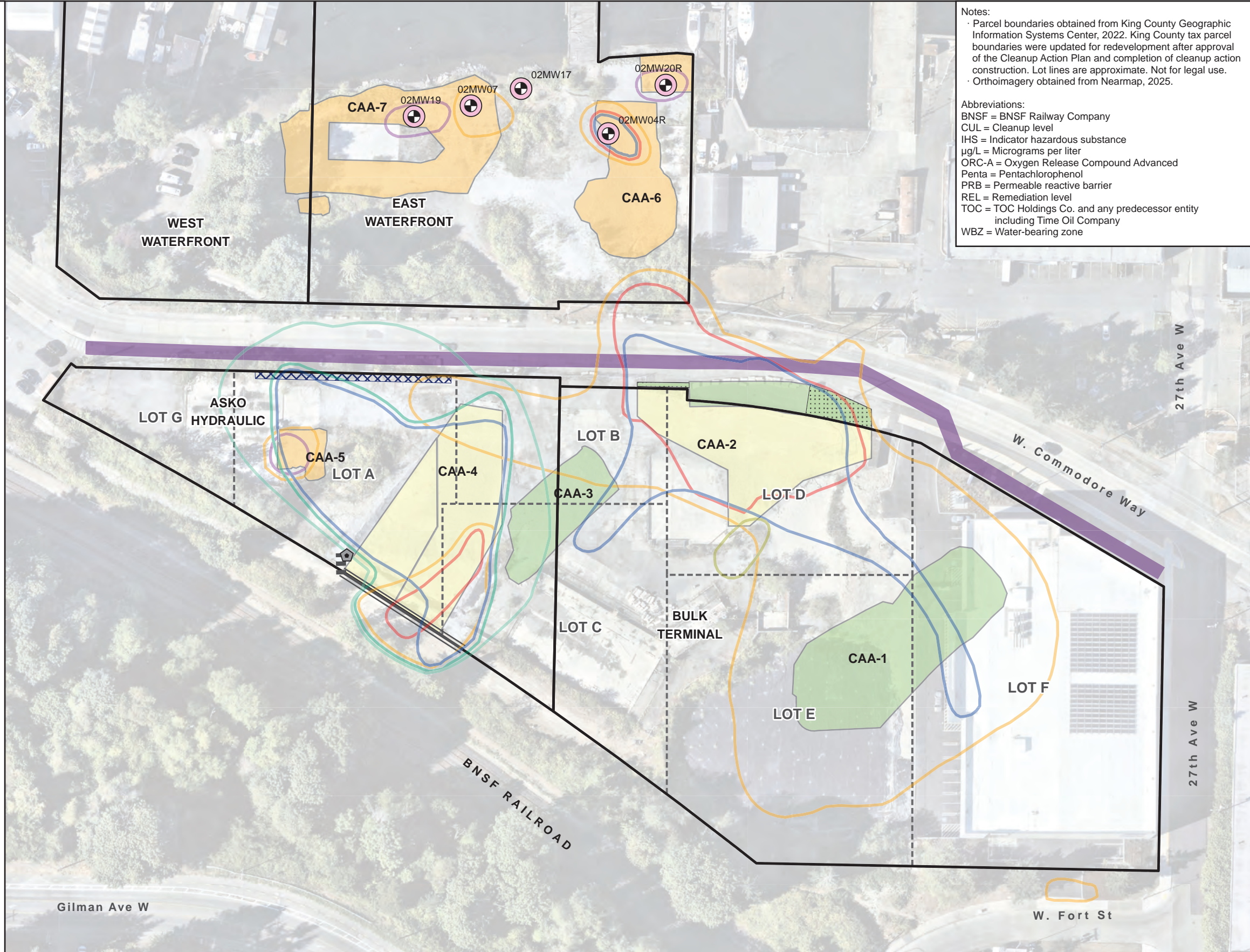
- Excavated to CULs
- Excavated to RELs
- In Situ Stabilization/Solidification
- PlumeStop Injection
- ORC-A Treatment
- Interceptor Trench
- PRB Wall for Trench
- Gravity Well

Approximate Extent of IHSs Exceeding CULs Before Cleanup Action (2019)

- Arsenic >5.0 µg/L
- Gasoline-Range Organics >800 µg/L
- Diesel- and Oil-Range Organics >500 µg/L
- Benzene >0.44 µg/L
- Trichloroethene >0.50 µg/L
- Vinyl Chloride >0.20 µg/L
- Penta >0.20 µg/L

Other Site Features

- Property Boundary for the Former TOC Seattle Terminal
- King County Tax Parcel
- Conditional Point of Compliance

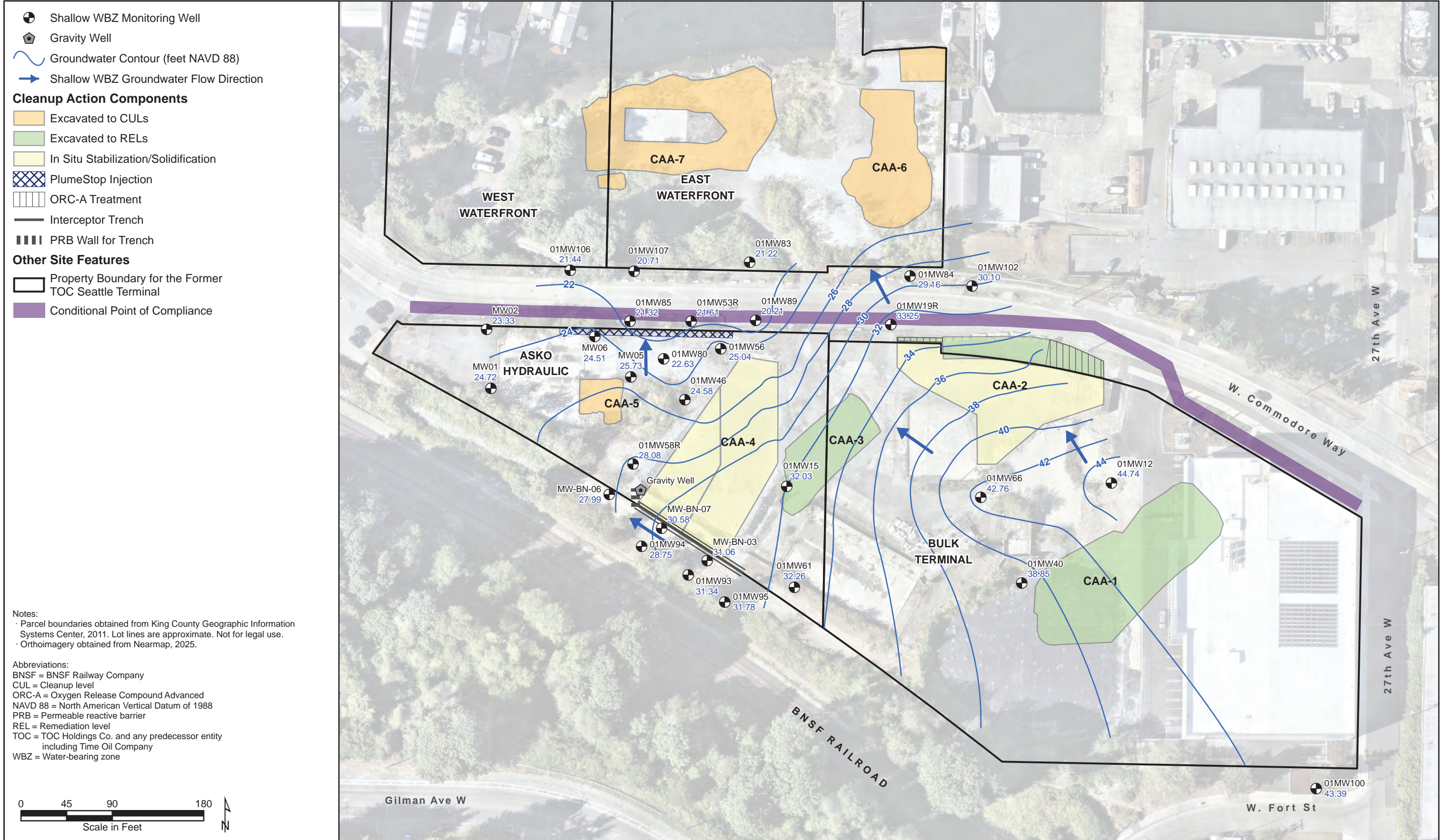


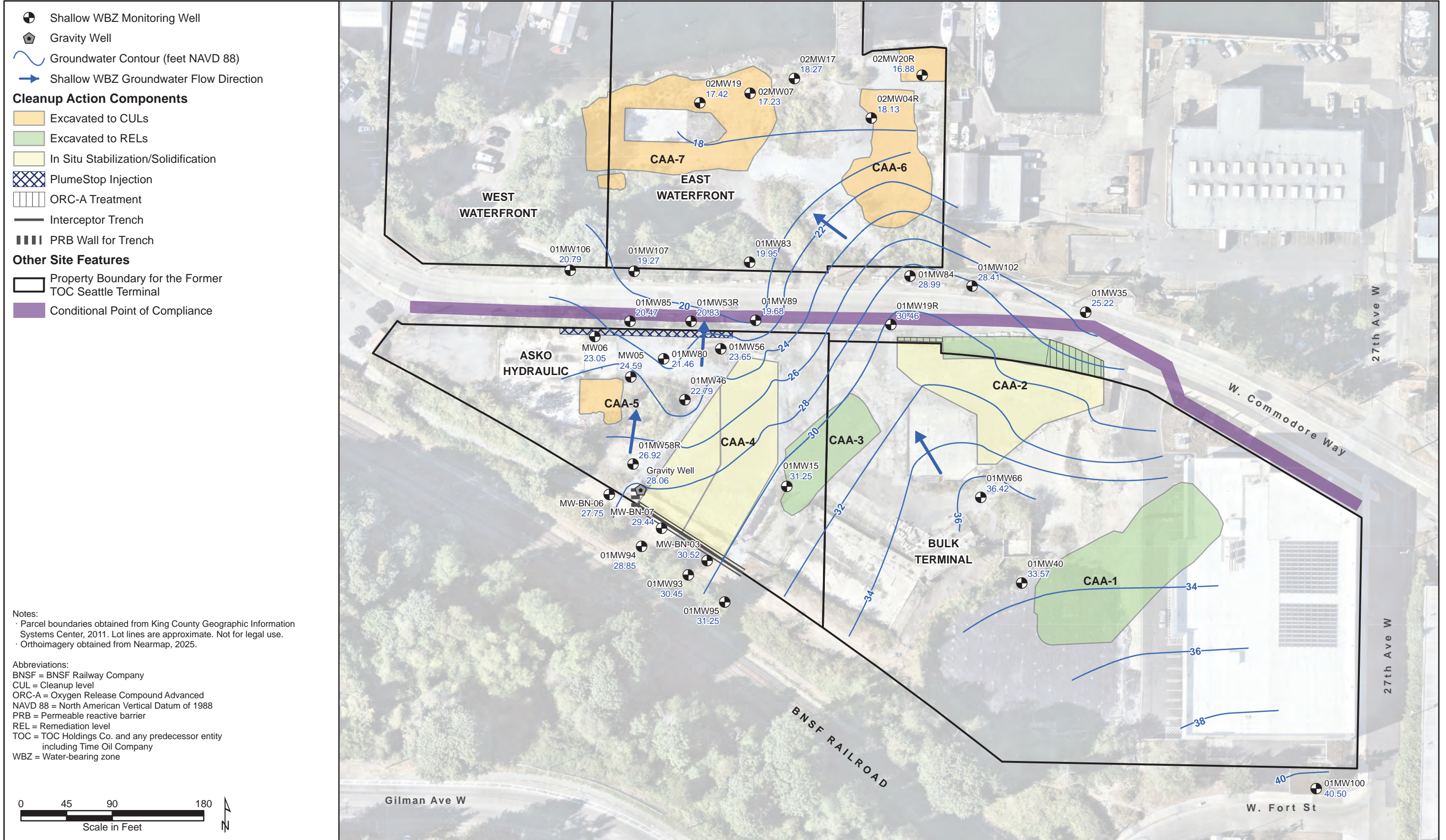
Notes:

- Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
- Orthoimagery obtained from Nearmap, 2025.

Abbreviations:

- BNSF = BNSF Railway Company
- CUL = Cleanup level
- IHS = Indicator hazardous substance
- µg/L = Micrograms per liter
- ORC-A = Oxygen Release Compound Advanced
- Penta = Pentachlorophenol
- PRB = Permeable reactive barrier
- REL = Remediation level
- TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
- WBZ = Water-bearing zone





**Long-Term Compliance Monitoring Annual Report
Appendix A: 2025 Groundwater Monitoring Annual Report
Time Oil Bulk Terminal
Seattle, Washington**

Figure A.4b
Shallow WBZ Groundwater Elevations—
September 2025

Groundwater Sample Result

- Non-detect or ≤ CUL
- > CUL–≤ 2x CUL
- > 2x CUL

Existing Monitoring Well Locations

- ⊕ Shallow WBZ Monitoring Well
- ⊕ Intermediate WBZ Monitoring Well

Cleanup Action Components

- Excavated to CULs
- Excavated to RELs
- In Situ Stabilization/Solidification
- PlumeStop Injection
- ORC-A Treatment
- Interceptor Trench
- PRB Wall for Trench
- Gravity Well

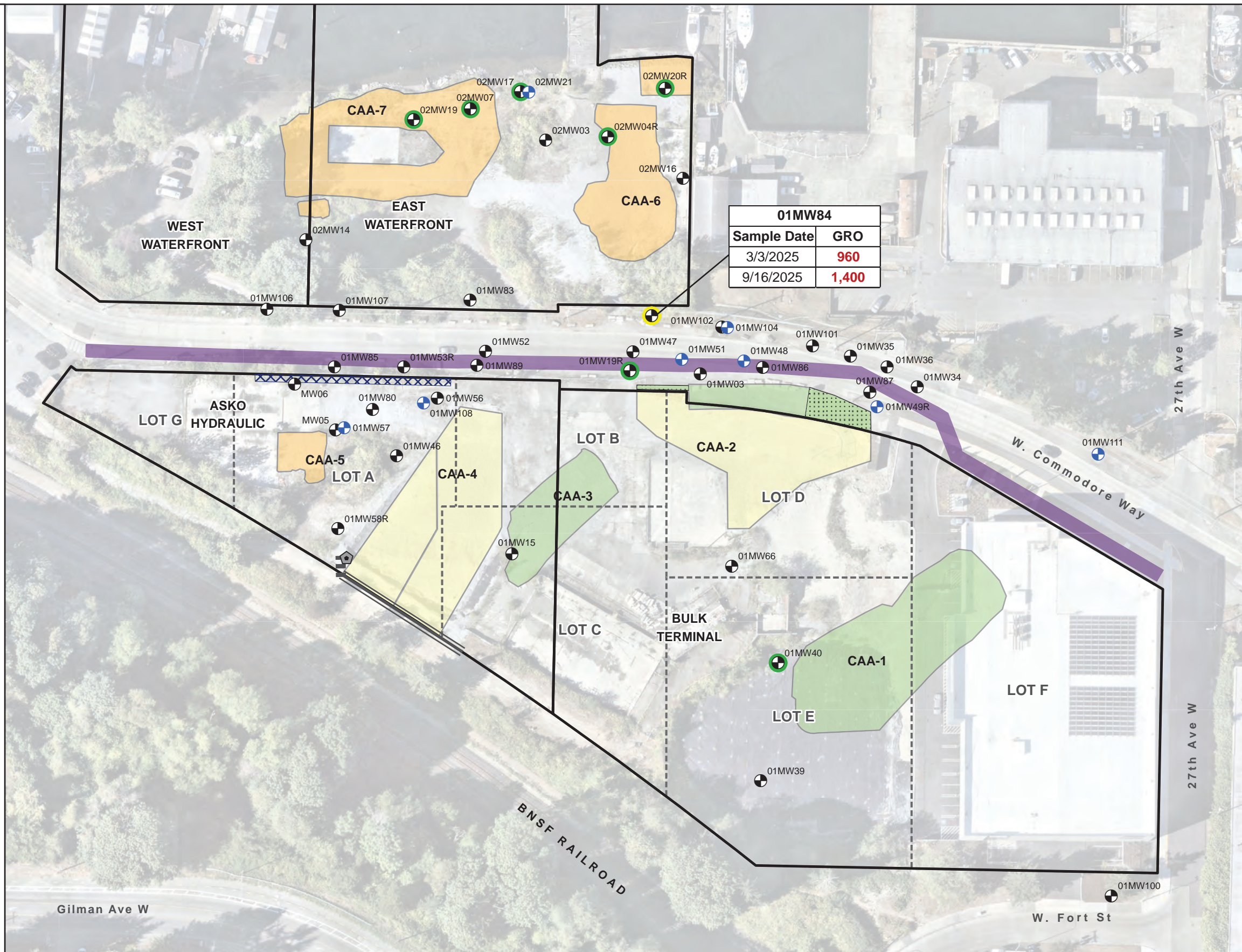
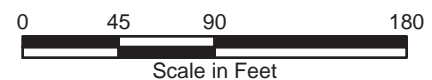
Other Site Features

- Property Boundary for the Former TOC Seattle Terminal
- King County Tax Parcel
- Conditional Point of Compliance

CUL
GRO: 800 µg/L

Notes:
 · Chemical results are presented only at locations where detected result exceeds the CUL. When a field duplicate sample was collected, the maximum result of the parent sample and duplicate is shown.
 · Results displayed in **RED** indicate an exceedance of the CUL.
 · Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
 · Orthoimagery obtained from Nearmap, 2025.

Abbreviations:
 BNSF = BNSF Railway Company
 CUL = Cleanup level
 GRO = Gasoline-range organics
 IHS = Indicator hazardous substance
 µg/L = Micrograms per liter
 ORC-A = Oxygen Release Compound Advanced
 PRB = Permeable reactive barrier
 REL = Remediation level
 TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
 WBZ = Water-bearing zone



01MW84	
Sample Date	GRO
3/3/2025	960
9/16/2025	1,400

Groundwater Sample Result

- Non-detect or ≤ CUL
- > CUL–≤ 2x CUL
- > 2x CUL

Existing Monitoring Well Locations

- ⊕ Shallow WBZ Monitoring Well
- ⊕ Intermediate WBZ Monitoring Well

Cleanup Action Components

- Excavated to CULs
- Excavated to RELs
- In Situ Stabilization/Solidification
- PlumeStop Injection
- ORC-A Treatment
- Interceptor Trench
- PRB Wall for Trench
- Gravity Well

Other Site Features

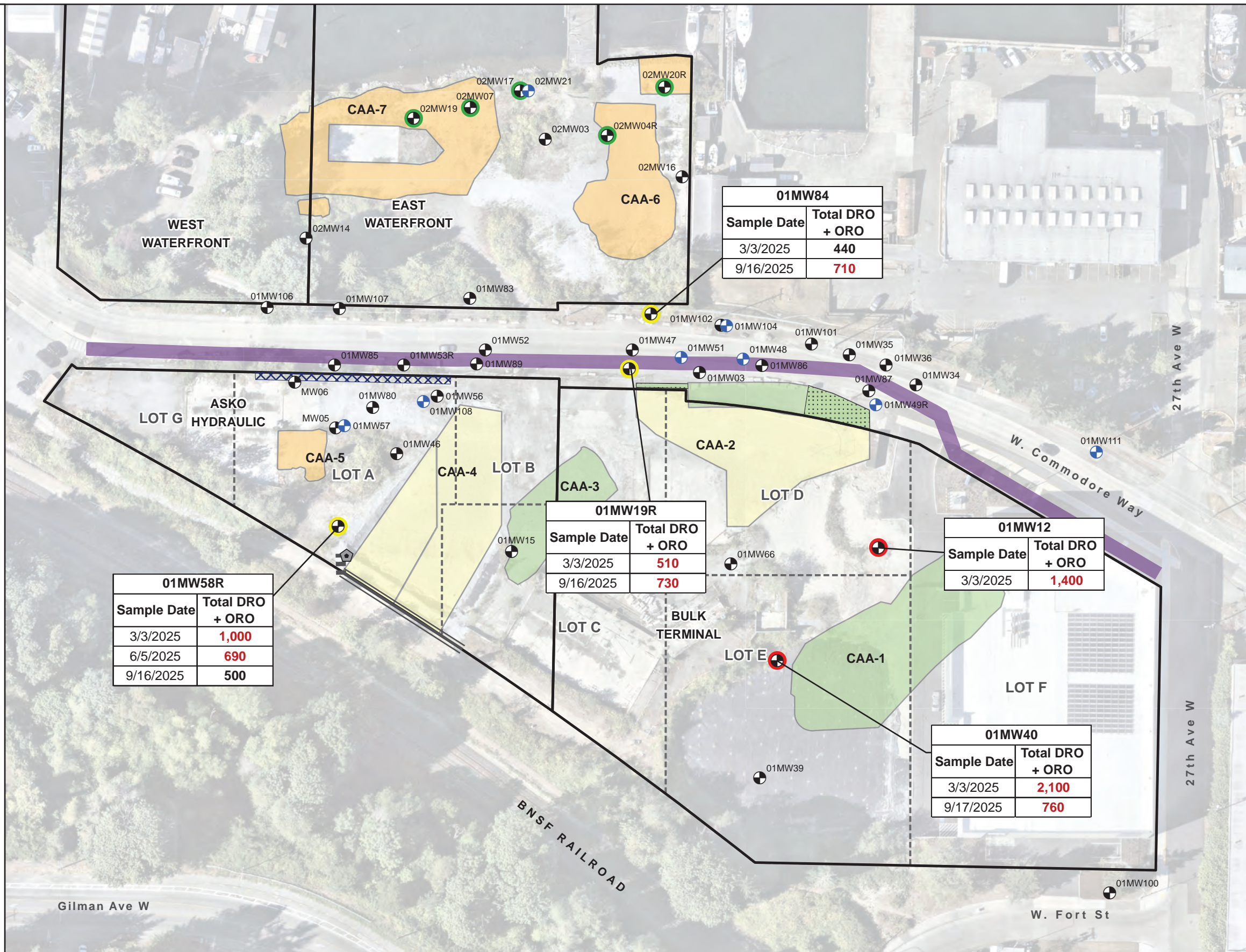
- Property Boundary for the Former TOC Seattle Terminal
- King County Tax Parcel
- Conditional Point of Compliance

CUL
Total DRO + ORO: 500 µg/L

Notes:

- Chemical results are presented only at locations where detected result exceeds the CUL. When a field duplicate sample was collected, the maximum result of the parent sample and duplicate is shown.
- Results displayed in **RED** indicate an exceedance of the CUL.
- Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
- Orthoimagery obtained from Nearmap, 2025.

Abbreviations:
 BNSF = BNSF Railway Company
 CUL = Cleanup level
 DRO = Diesel-range organics
 IHS = Indicator hazardous substance
 µg/L = Micrograms per liter
 ORC-A = Oxygen Release Compound Advanced
 ORO = Oil-range organics
 PRB = Permeable reactive barrier
 REL = Remediation level
 TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
 WBZ = Water-bearing zone



Groundwater Sample Result

- Non-detect or ≤ CUL
- > CUL – ≤ 2x CUL
- > 2x CUL

Existing Monitoring Well Locations

- Shallow WBZ Monitoring Well
- Intermediate WBZ Monitoring Well

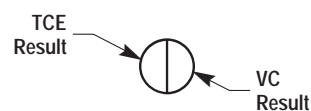
Cleanup Action Components

- Excavated to CULs
- Excavated to RELs
- In Situ Stabilization/Solidification
- PlumeStop Injection
- ORC-A Treatment
- Interceptor Trench
- PRB Wall for Trench
- Gravity Well

Other Site Features

- Property Boundary for the Former TOC Seattle Terminal
- King County Tax Parcel
- Conditional Point of Compliance

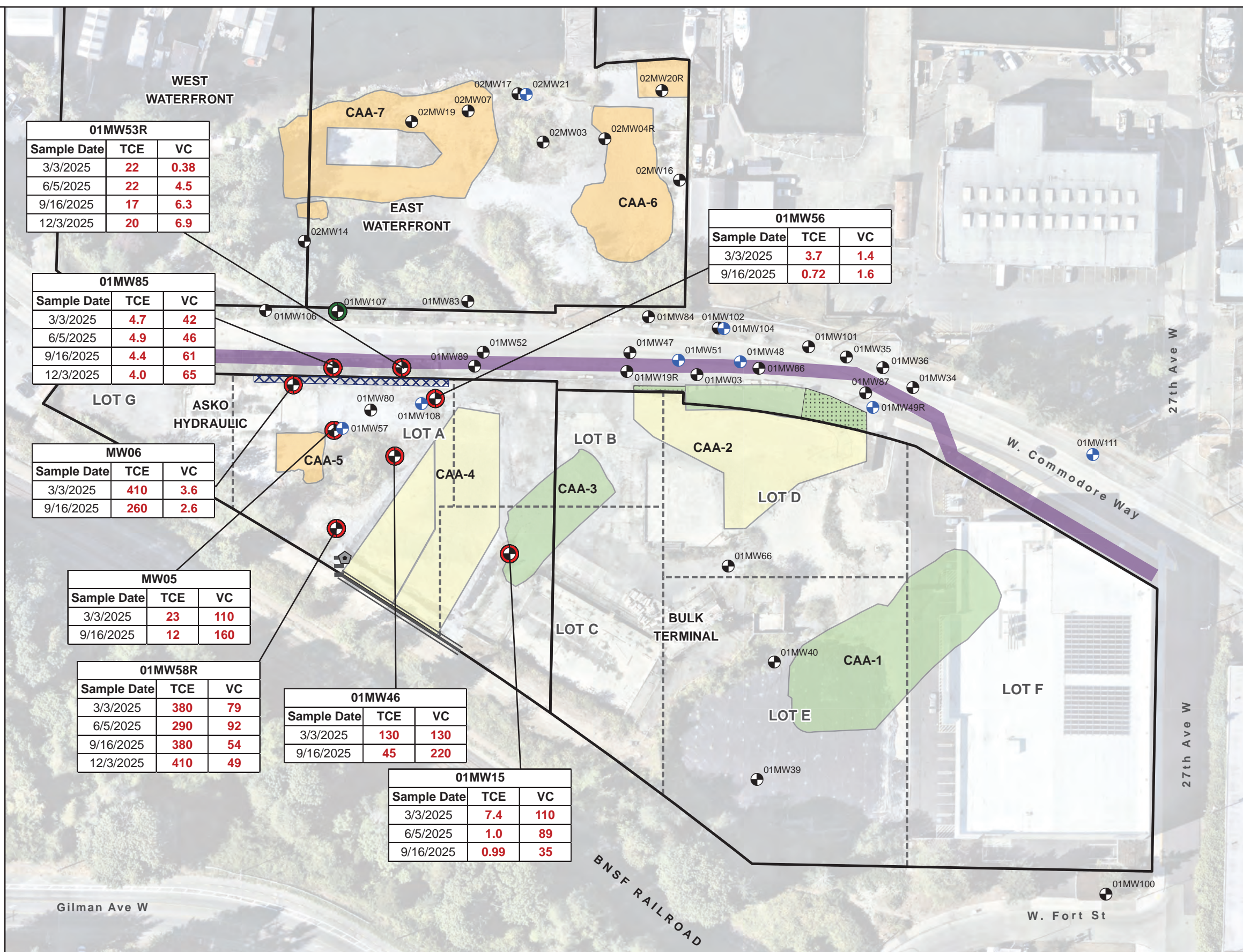
CUL
 Trichloroethene: 0.50 µg/L
 Vinyl Chloride: 0.20 µg/L



Notes:

- Chemical results are presented only at locations where detected result exceeds the CUL. When a field duplicate sample was collected, the maximum result of the parent sample and duplicate is shown.
- Results displayed in **RED** indicate a detected exceedance of the CUL.
- Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
- Orthoimagery obtained from Nearmap, 2025.

Abbreviations:
 BNSF = BNSF Railway Company
 CUL = Cleanup level
 TCE = Trichloroethene
 IHS = Indicator hazardous substance
 µg/L = Micrograms per liter
 ORC-A = Oxygen Release Compound Advanced
 PRB = Permeable reactive barrier
 REL = Remediation level
 TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
 VC = Vinyl chloride
 WBZ = Water-bearing zone



Groundwater Sample Result

- Non-detect or ≤ CUL
- > CUL–≤ 2x CUL
- > 2x CUL

Existing Monitoring Well Locations

- ⊕ Shallow WBZ Monitoring Well
- ⊕ Intermediate WBZ Monitoring Well

Cleanup Action Components

- Excavated to CULs
- Excavated to RELs
- In Situ Stabilization/Solidification
- PlumeStop Injection
- ORC-A Treatment
- Interceptor Trench
- PRB Wall for Trench
- Gravity Well

Other Site Features

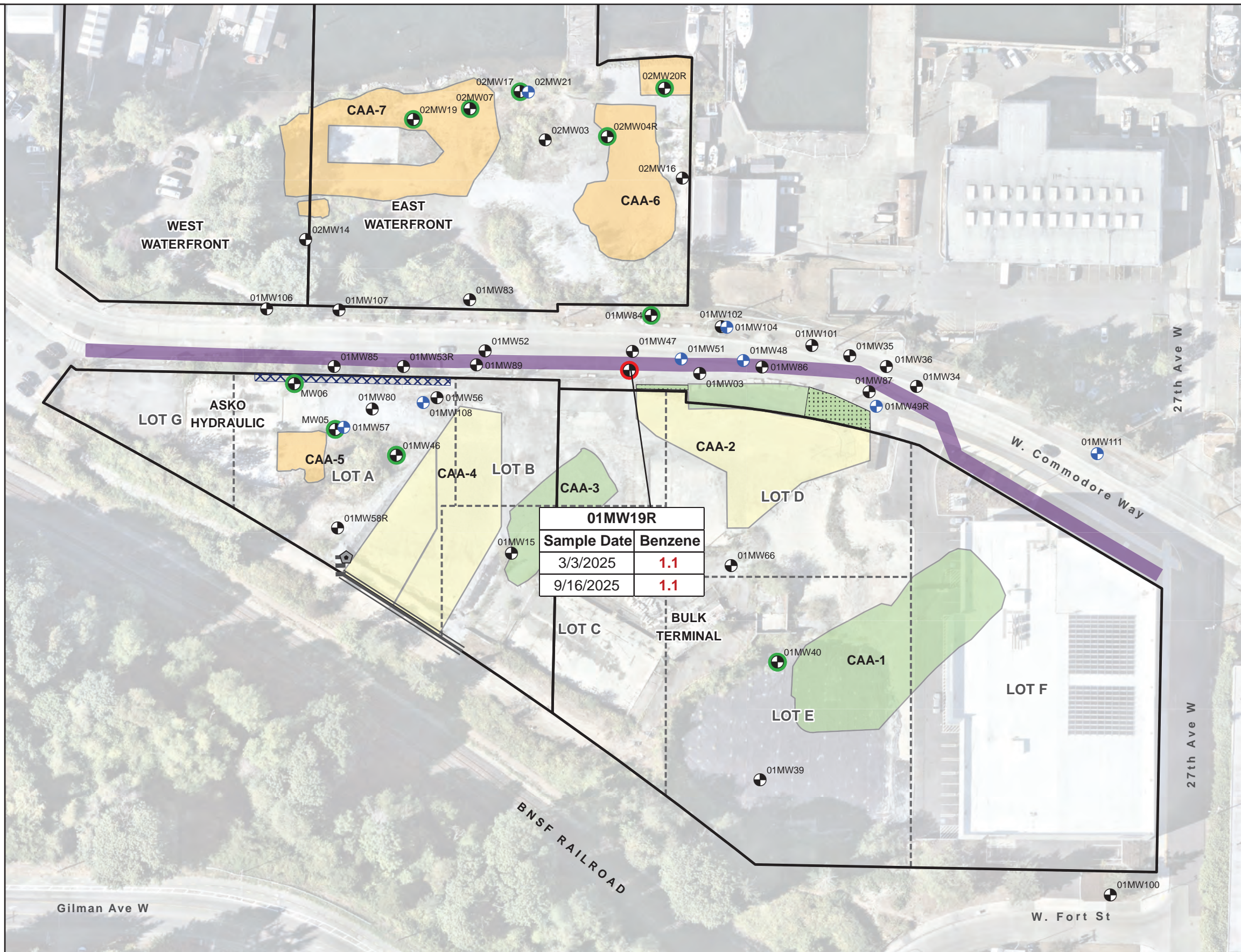
- Property Boundary for the Former TOC Seattle Terminal
- King County Tax Parcel
- Conditional Point of Compliance

CUL
Benzene: 0.44 µg/L

Notes:

- Chemical results are presented only at locations where detected result exceeds the CUL. When a field duplicate sample was collected, the maximum result of the parent sample and duplicate is shown.
- Results displayed in **RED** indicate a detected exceedance of the CUL.
- Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
- Orthoimagery obtained from Nearmap, 2025.

Abbreviations:
 BNSF = BNSF Railway Company
 CUL = Cleanup level
 IHS = Indicator hazardous substance
 µg/L = Micrograms per liter
 ORC-A = Oxygen Release Compound Advanced
 PRB = Permeable reactive barrier
 REL = Remediation level
 TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
 WBZ = Water-bearing zone



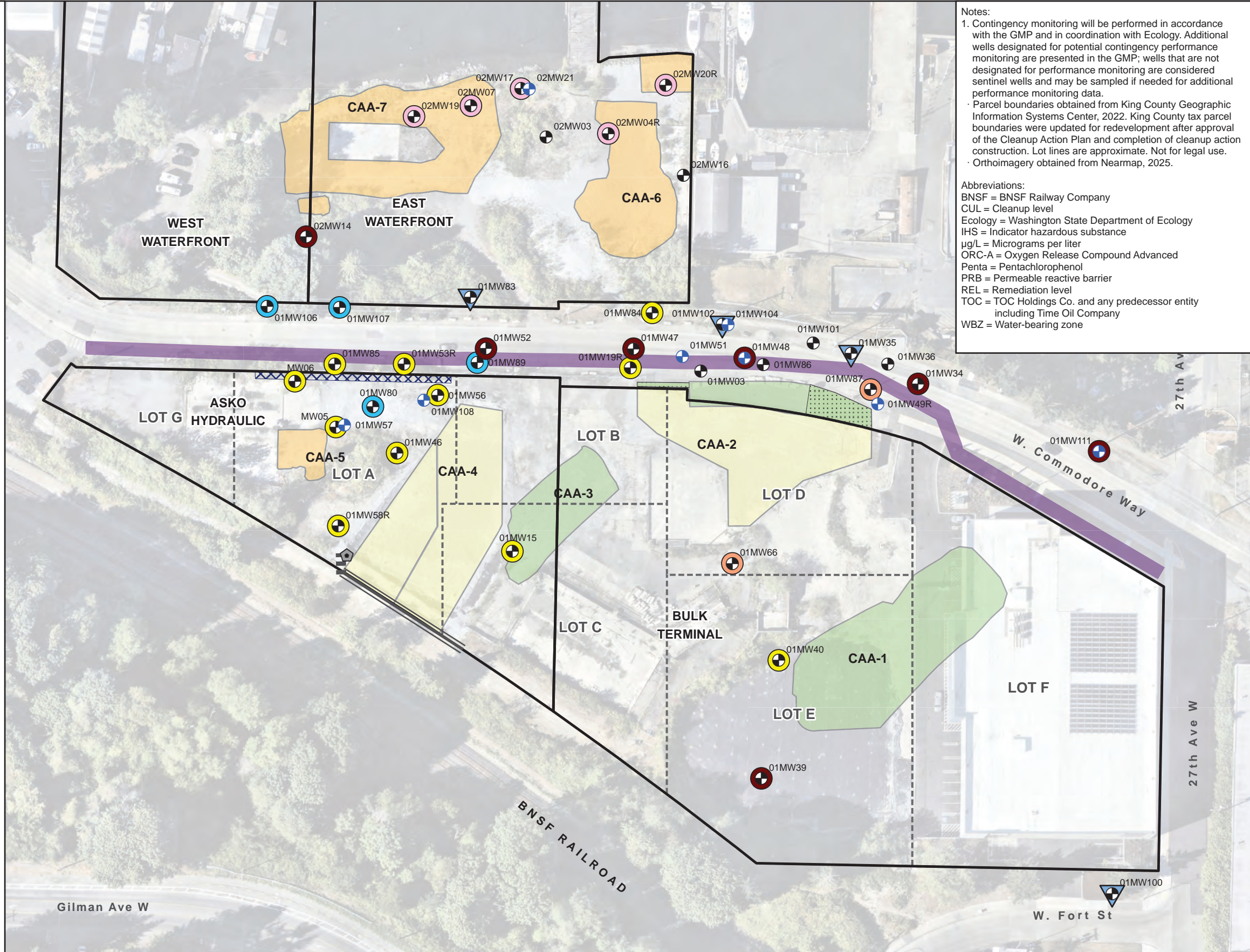
- Monitoring Well Locations**
- Shallow WBZ Monitoring Well
 - Intermediate WBZ Monitoring Well
- 2026 Monitoring Locations**
- Semiannual Performance
 - Annual Performance
 - Semiannual Water Level Measurement
 - Annual Compliance
 - Contingency Performance⁽¹⁾
 - To be Decommissioned
- Cleanup Action Components**
- Excavated to CULs
 - Excavated to RELs
 - In Situ Stabilization/Solidification
 - PlumeStop Injection
 - ORC-A Treatment
 - Interceptor Trench
 - PRB Wall for Trench
 - Gravity Well
- Other Site Features**
- Property Boundary for the Former TOC Seattle Terminal
 - King County Tax Parcel
 - Conditional Point of Compliance

Notes:

- Contingency monitoring will be performed in accordance with the GMP and in coordination with Ecology. Additional wells designated for potential contingency performance monitoring are presented in the GMP; wells that are not designated for performance monitoring are considered sentinel wells and may be sampled if needed for additional performance monitoring data.
- Parcel boundaries obtained from King County Geographic Information Systems Center, 2022. King County tax parcel boundaries were updated for redevelopment after approval of the Cleanup Action Plan and completion of cleanup action construction. Lot lines are approximate. Not for legal use.
- Orthoimagery obtained from Nearmap, 2025.

Abbreviations:

- BNSF = BNSF Railway Company
- CUL = Cleanup level
- Ecology = Washington State Department of Ecology
- IHS = Indicator hazardous substance
- µg/L = Micrograms per liter
- ORC-A = Oxygen Release Compound Advanced
- Penta = Pentachlorophenol
- PRB = Permeable reactive barrier
- REL = Remediation level
- TOC = TOC Holdings Co. and any predecessor entity including Time Oil Company
- WBZ = Water-bearing zone

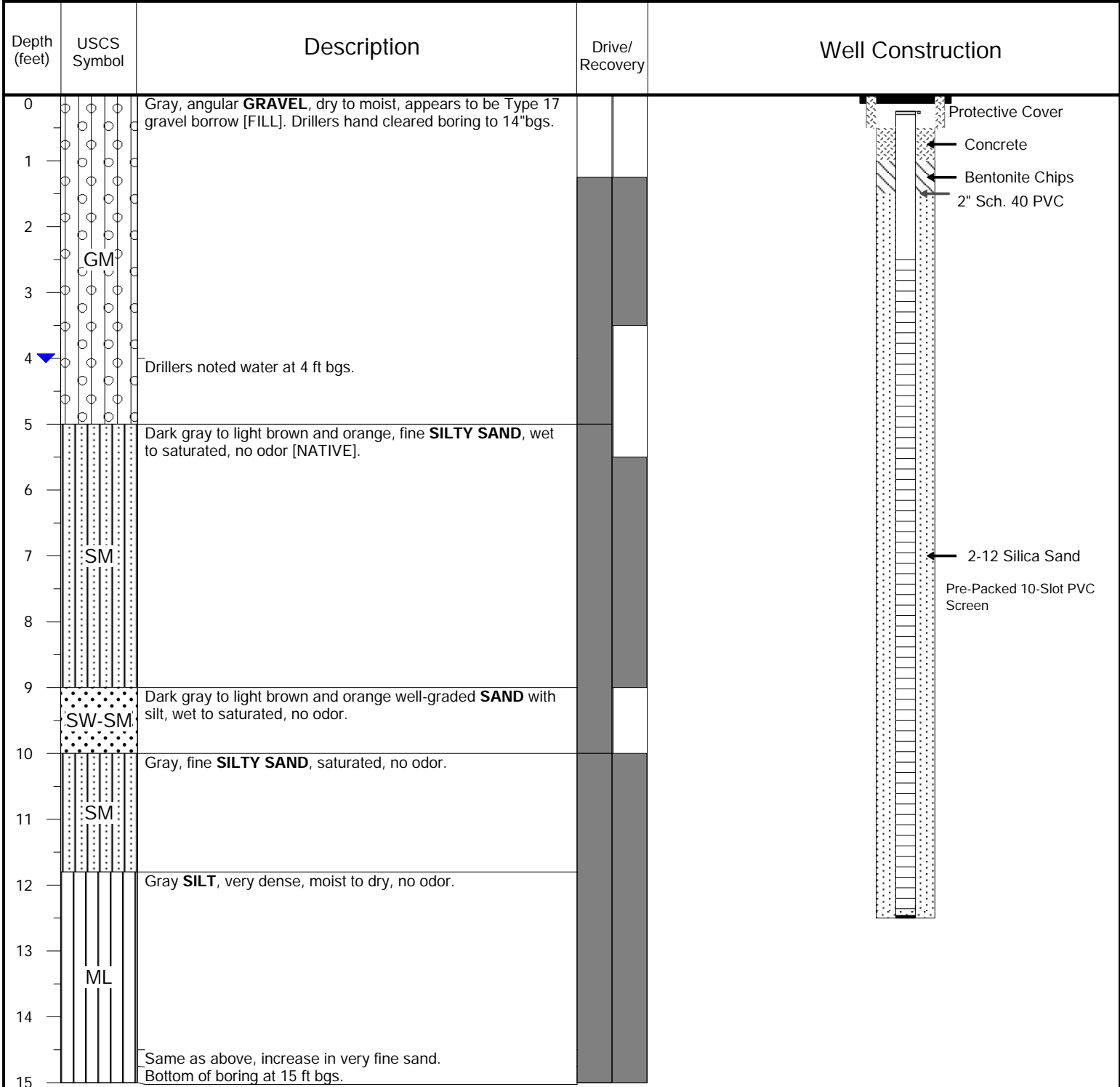


Long-Term Compliance Monitoring Annual Report Appendix A: 2025 Groundwater Monitoring Annual Report

Time Oil Bulk Terminal

Attachment A.1 Well Logs

PROJECT: Cantera-TOC	LOCATION: 2737 W Commodore Way	WELL ID: 02MW20R
LOGGED BY: PO	BORING LOCATION: East Waterfront	ECOLOGY WELL ID: BQL 247
DRILLED BY: Holocene	COORDINATE SYSTEM: NAD 83	NORTHING: 245847.04
DRILLING EQUIPMENT: Geoprobe 7822DT	SCREENED INTERVAL (ft bgs): 2.5-12.5	GROUND SURFACE ELEV.: 22.13
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft bgs): 15	DEPTH TO WATER (ft bgs): 4
SAMPLING METHOD: Continuous 5-foot Liners	BORING DIAMETER (inch): 2	DRILL DATE: 8/13/2025



ABBREVIATIONS:
ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES:

**Long-Term Compliance Monitoring
Annual Report Appendix A:
2025 Groundwater Monitoring Annual Report**

Time Oil Bulk Terminal

**Attachment A.2
Laboratory Reports**

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

March 12, 2025

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

Pamela Osterhout, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Osterhout:

Included are the results from the testing of material submitted on March 3, 2025 from the Cantera/Time Oil, F&BI 503011 project. There are 27 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Floyd Snider Lab Data, Kristin Anderson
FDS0312R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 3, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera/Time Oil, F&BI 503011 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
503011 -01	01MW12-030325
503011 -02	01MW19R-030325
503011 -03	01MW40-030325
503011 -04	01MW84-030325
503011 -05	01MW66-030325
503011 -06	MW01-030325
503011 -07	01MW15-030325
503011 -08	01MW46-030325
503011 -09	01MW53R-030325
503011 -10	01MW56-030325
503011 -11	01MW58R-030325
503011 -12	01MW61-030325
503011 -13	01MW85-030325
503011 -14	01MW107-030325
503011 -15	MW05-030325
503011 -16	MW06-030325
503011 -17	01MW58R-D-030325

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/25
Date Received: 03/03/25
Project: Cantera/Time Oil, F&BI 503011
Date Extracted: 03/04/25
Date Analyzed: 03/04/25

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-G_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
01MW12-030325 503011-01	<100	80
01MW19R-030325 503011-02	500	98
01MW40-030325 503011-03	<100	80
01MW84-030325 503011-04	960	86
MW01-030325 503011-06	<100	80
01MW61-030325 503011-12	<100	78
Method Blank 05-461 MB	<100	82

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/25
Date Received: 03/03/25
Project: Cantera/Time Oil, F&BI 503011
Date Extracted: 03/05/25
Date Analyzed: 03/05/25

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 50-150)
01MW12-030325 503011-01	1,000 x	380 x	132
01MW19R-030325 503011-02	510 x	<250	127
01MW40-030325 503011-03	1,700 x	410 x	135
01MW84-030325 503011-04	440 x	<250	121
MW01-030325 503011-06	140 x	<250	134
01MW58R-030325 503011-11	770 x	<250	122
01MW61-030325 503011-12	470 x	<250	140
01MW58R-D-030325 503011-17	1,000 x	<250	146
Method Blank 05-600 MB	<50	<250	122

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW12-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-01
Date Analyzed:	03/10/25	Data File:	031012.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	115	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW19R-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-02
Date Analyzed:	03/10/25	Data File:	031015.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	71	132
Toluene-d8	94	68	139
4-Bromofluorobenzene	112	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	1.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW40-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-03
Date Analyzed:	03/10/25	Data File:	031013.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	113	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW84-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-04
Date Analyzed:	03/10/25	Data File:	031014.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	96	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW01-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-06
Date Analyzed:	03/10/25	Data File:	031018.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	110	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Benzene	<0.35
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW15-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-07
Date Analyzed:	03/10/25	Data File:	031022.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	110	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	110
cis-1,2-Dichloroethene	41
Trichloroethene	7.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW46-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-08 1/10
Date Analyzed:	03/10/25	Data File:	031026.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	116	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	130
cis-1,2-Dichloroethene	550
Benzene	<3.5
Trichloroethene	130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW53R-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-09
Date Analyzed:	03/10/25	Data File:	031016.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	117	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.38
cis-1,2-Dichloroethene	2.2
Trichloroethene	22

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW56-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-10
Date Analyzed:	03/10/25	Data File:	031017.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	113	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.4
cis-1,2-Dichloroethene	1.1
Trichloroethene	3.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-11 1/10
Date Analyzed:	03/10/25	Data File:	031024.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	110	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	75
cis-1,2-Dichloroethene	380
Trichloroethene	340

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW61-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-12
Date Analyzed:	03/10/25	Data File:	031019.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	118	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Benzene	<0.35
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW85-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-13 1/10
Date Analyzed:	03/10/25	Data File:	031028.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	110	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	42
cis-1,2-Dichloroethene	1,200
Trichloroethene	4.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW107-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-14
Date Analyzed:	03/10/25	Data File:	031020.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	117	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	0.070

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW05-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-15 1/10
Date Analyzed:	03/10/25	Data File:	031027.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	115	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	110
cis-1,2-Dichloroethene	680
Benzene	<3.5
Trichloroethene	23

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW06-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-16 1/10
Date Analyzed:	03/11/25	Data File:	031115.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	104	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	3.6
cis-1,2-Dichloroethene	99
Benzene	<3.5
Trichloroethene	410

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-D-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	503011-17 1/10
Date Analyzed:	03/10/25	Data File:	031025.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	110	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	79
cis-1,2-Dichloroethene	390
Trichloroethene	380

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/10/25	Lab ID:	05-0526 mb
Date Analyzed:	03/10/25	Data File:	031009.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	96	68	139
4-Bromofluorobenzene	111	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Benzene	<0.35
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	01MW66-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/05/25	Lab ID:	503011-05 1/0.5
Date Analyzed:	03/05/25	Data File:	030515.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	11	65
Phenol-d6	35	11	65
Nitrobenzene-d5	101	11	173
2-Fluorobiphenyl	86	25	128
2,4,6-Tribromophenol	121	10	140
Terphenyl-d14	120	47	142

Compounds:	Concentration ug/L (ppb)
------------	--------------------------

Pentachlorophenol	0.84
-------------------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera/Time Oil, F&BI 503011
Date Extracted:	03/05/25	Lab ID:	05-0595 mb 1/0.5
Date Analyzed:	03/05/25	Data File:	030514.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	50	11	65
Phenol-d6	36	11	65
Nitrobenzene-d5	107	11	173
2-Fluorobiphenyl	103	25	128
2,4,6-Tribromophenol	109	10	140
Terphenyl-d14	111	47	142

Compounds:	Concentration ug/L (ppb)
Pentachlorophenol	<0.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/25

Date Received: 03/03/25

Project: Cantera/Time Oil, F&BI 503011

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-G_x**

Laboratory Code: 503011-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/25

Date Received: 03/03/25

Project: Cantera/Time Oil, F&BI 503011

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	96	65-151	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/25

Date Received: 03/03/25

Project: Cantera/Time Oil, F&BI 503011

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 503011-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	109	16-176
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
Benzene	ug/L (ppb)	10	<0.35	101	50-150
Trichloroethene	ug/L (ppb)	10	<0.05	95	43-133

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	104	111	43-149	7
cis-1,2-Dichloroethene	ug/L (ppb)	10	95	99	70-130	4
Benzene	ug/L (ppb)	10	99	104	70-130	5
Trichloroethene	ug/L (ppb)	10	92	98	70-130	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/25

Date Received: 03/03/25

Project: Cantera/Time Oil, F&BI 503011

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Pentachlorophenol	ug/L (ppb)	10	119	125	10-144	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

503011

SAMPLE CHAIN OF CUSTODY

03/03/25 T3/WW4

Page # 1 of 2

Report To Pamela + Kristin

Company Floyd Snider

Address 101 Union St Suite 100

City, State, ZIP Seattle, WA 98101

Phone 206 805-2198 Email labdata@floydsnider.com

SAMPLERS (signature) Pam McCall

PROJECT NAME Carnera Fino Oil

REMARKS Pioneer

INVOICE TO Pioneer

TURNAROUND TIME
 Standard turnaround
 RUSH
Rush charges authorized by: _____

SAMPLE DISPOSAL
 Archive samples
 Other
 Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes			
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	cVOCs 8260	Benzene 8260	Penta 8270 SM				
✓ 01MWW12-030325	01A-G	3/3/25	15:00	GM	7	✓	✓												
✓ 01MWW19R-030325	02		12:15		7	✓	✓												
✓ 01MWW40-030325	03		15:50		7	✓	✓												
✓ 01MWW84-030325	04		11:25		7	✓	✓												
✓ 01MWW60-030325	05		13:45		1														
✓ MW01-030325	06A-G		12:45		7	✓	✓												
✓ 01MWW15-030325	07A-C		10:10		3														
✓ 01MWW40-030325	08A-E		09:15		5														
✓ 01MWW53R-030325	09A-C		10:20		3														
✓ 01MWW56-030325	10		13:30		3														

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Reinquinshed by: <u>[Signature]</u>	Meg McCall	Floyd Snider	3/3/25	17:09
Received by: <u>[Signature]</u>	VIN#	FB	3-3-25	17:09
Reinquinshed by:		Sample received at		
Received by:				

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

Report To Pamela + Kristin
 Company Floyd Snider
 Address Leol Union St, Suite 100
 City, State, ZIP Seattle, WA 98108
 Phone 206805-2188 Email labdata@floydsnider.com

SAMPLERS (signature) [Signature]
 PROJECT NAME Cantera / Time Oil
 PO #
 REMARKS CIDCs = TCE, Cr, H2O, V.C., PIONEER
 INVOICE TO Pioneer
 ANALYSES REQUESTED

TURNAROUND TIME
 Standard turnaround
 RUSH
 Rush charges authorized by:
 SAMPLE DISPOSAL
 Archive samples
 Other
 Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	CIDCs 8260	Benzene 8260	Penta	Notes
✓ 01MWS0R-030325	11 A-D	3/3/25	14:20	GW	4	✓	✓						✓			
✓ 01MWS0R-030325	12 A-G		15:40	GW	7	✓	✓						✓			
✓ 01MWS0R-030325	13 A-C		09:20	GW	3								✓			
✓ 01MWS0R-030325	14 ↓		08:40	GW	3								✓			
✓ MWS05-030325	15 A-E		11:10	GW	5								✓			
✓ MWS06-030325	16 ↓		11:45	GW	5								✓			
✓ 01MWS0R-D-030325	17 A-D		14:30	GW	4	✓							✓			

SIGNATURE
 Relinquished by: [Signature]
 Received by: [Signature]
 Relinquished by: [Signature]
 Received by: [Signature]

PRINT NAME
 meg mccann
 VINH

COMPANY
 Floyd Snider
 FBI

DATE
 3/3/25
 3-3-25

TIME
 17:09
 17:09

Samples received at 3 °C

Friedman & Bruya, Inc.
 5500 4th Ave S.
 Seattle WA 98108
 (206) 285-8282
 office@friedmanandbruya.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 503011 CLIENT Floyd Snider INITIALS/ AP DATE: 03/03/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 3 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive?
 Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ AP
*or other representative documents, letters, and/or shipping memos Date: 03/04/25

Number of days samples have been sitting prior to receipt at laboratory 0 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No Time on label 10:00 for O1Mw15- Not on COC/label
030325 (07A-C)
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

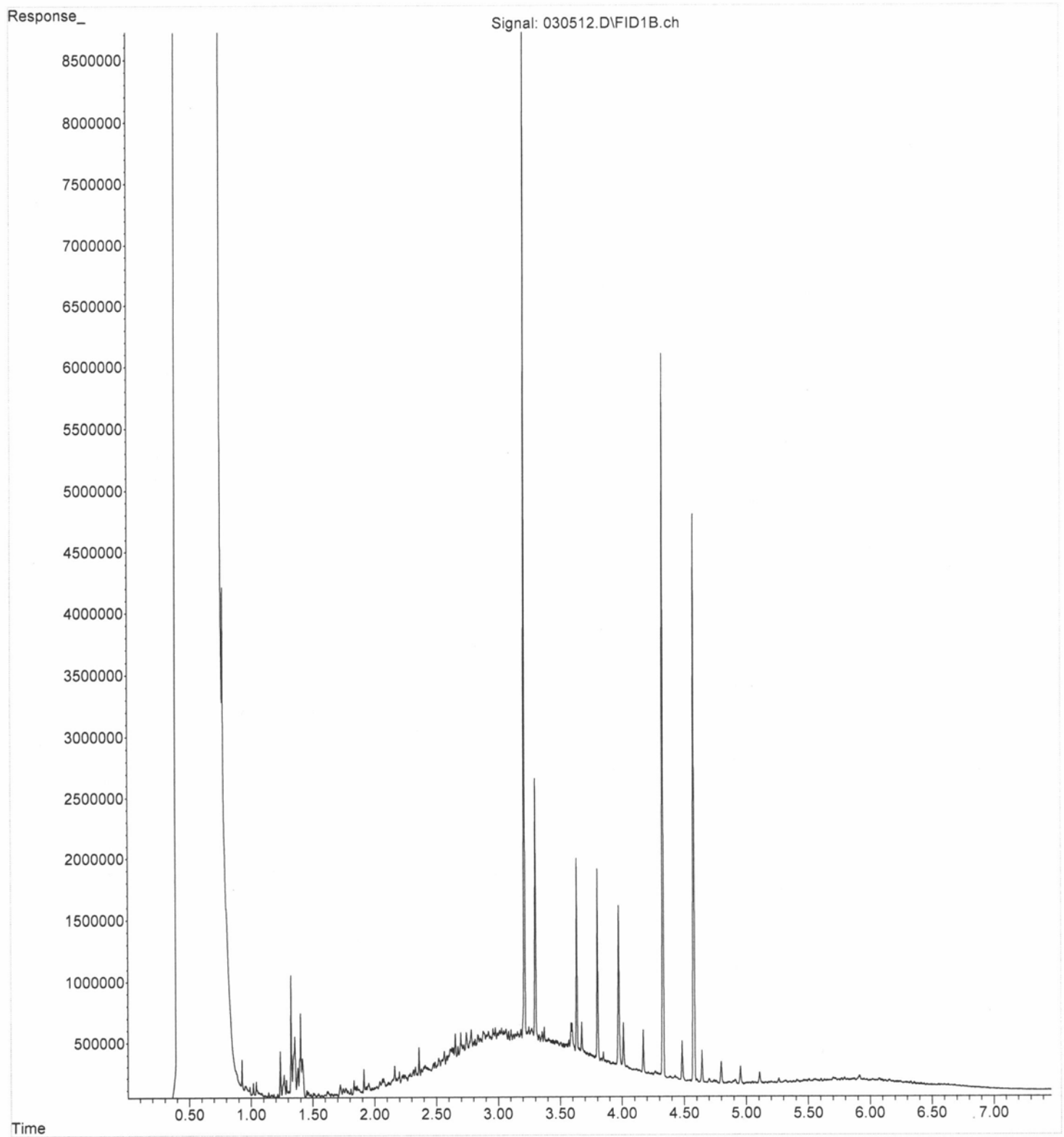
Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

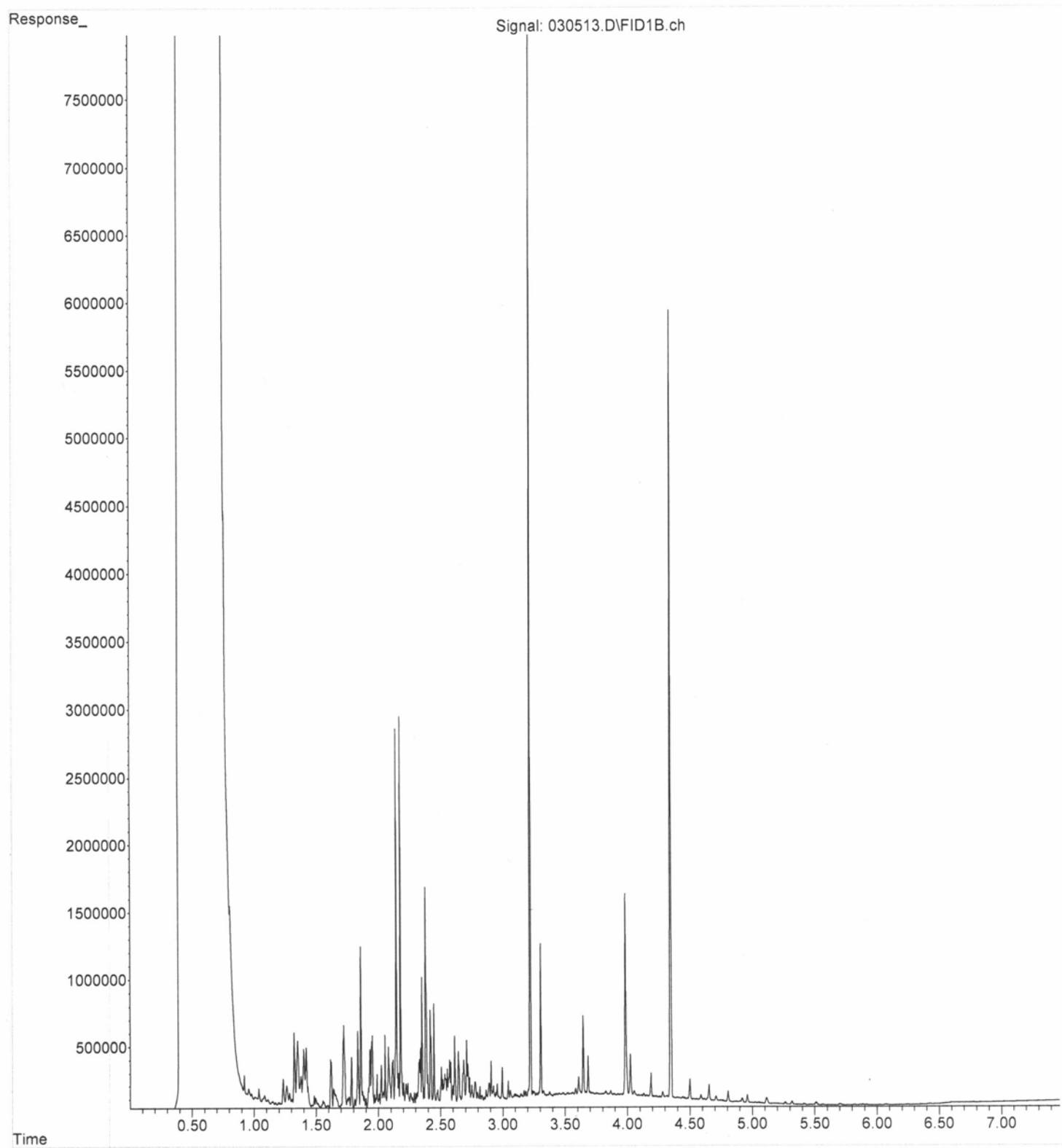
File : P:\Proc_GC14\03-05-25\030512.D
Operator : TL
Acquired : 05 Mar 2025 02:34 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-01
Misc Info :
Vial Number: 12

ERR



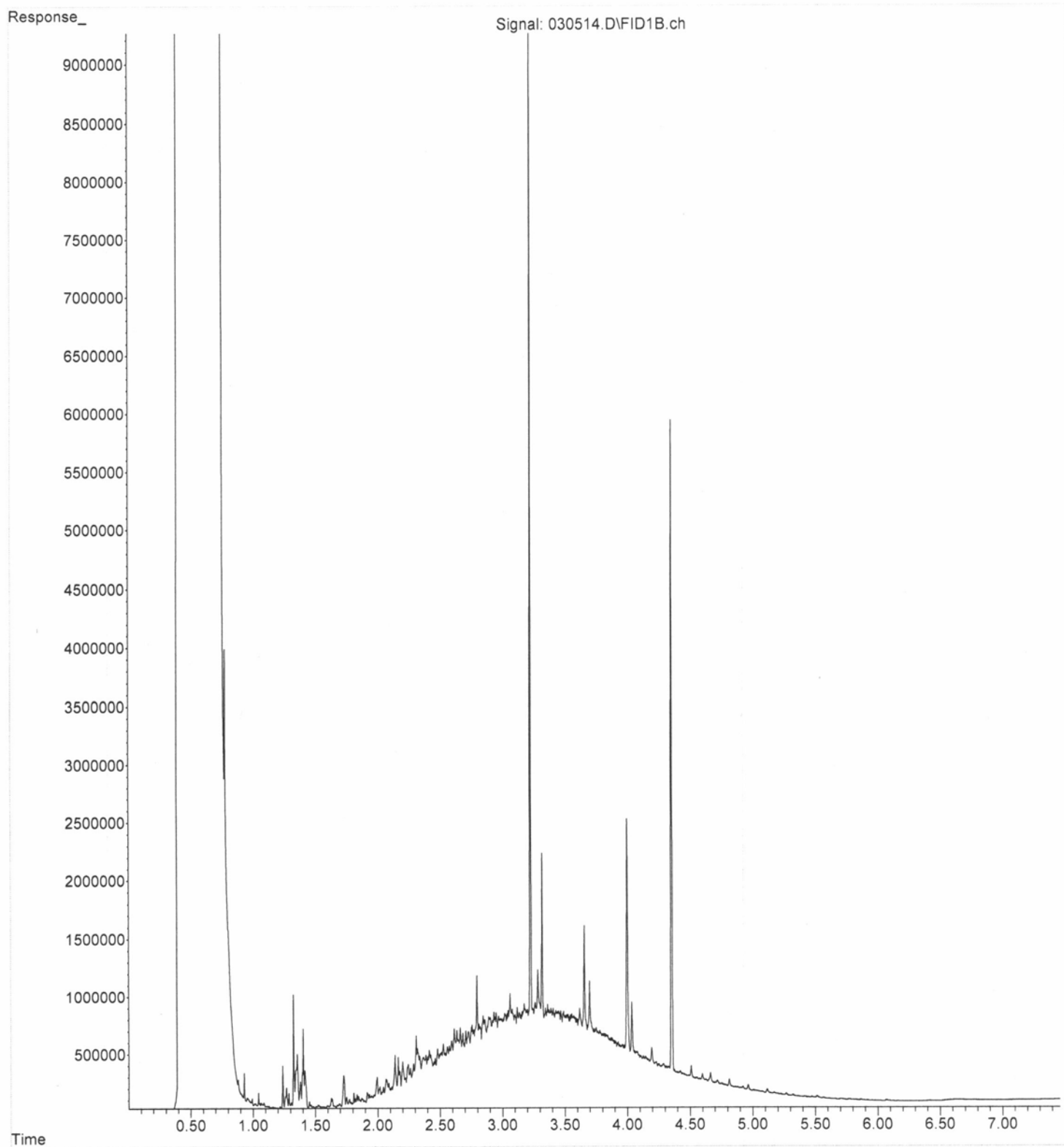
File :P:\Proc_GC14\03-05-25\030513.D
Operator : TL
Acquired : 05 Mar 2025 02:46 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-02
Misc Info :
Vial Number: 13

ERR



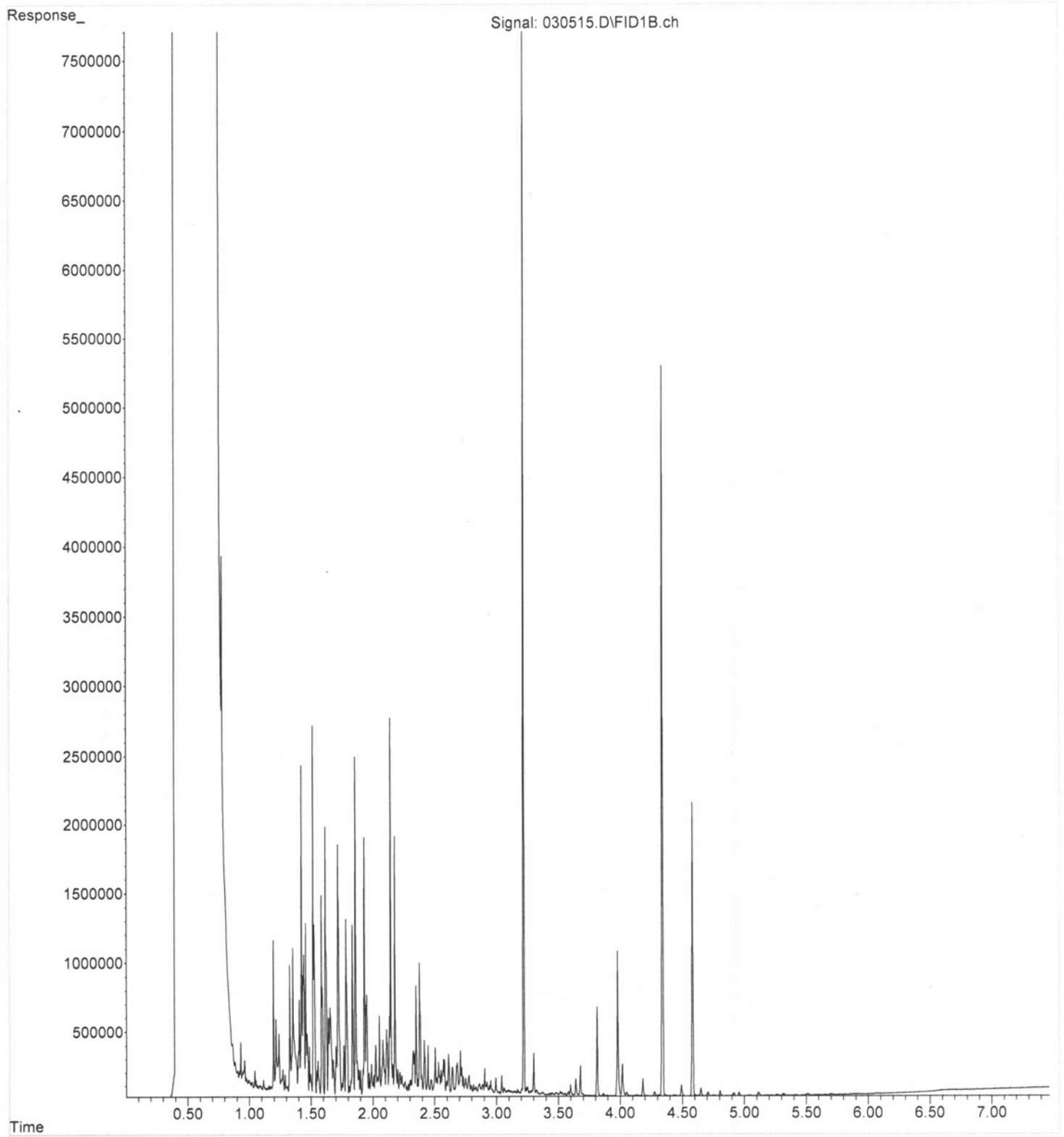
File :P:\Proc_GC14\03-05-25\030514.D
Operator : TL
Acquired : 05 Mar 2025 02:57 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-03
Misc Info :
Vial Number: 14

ERR



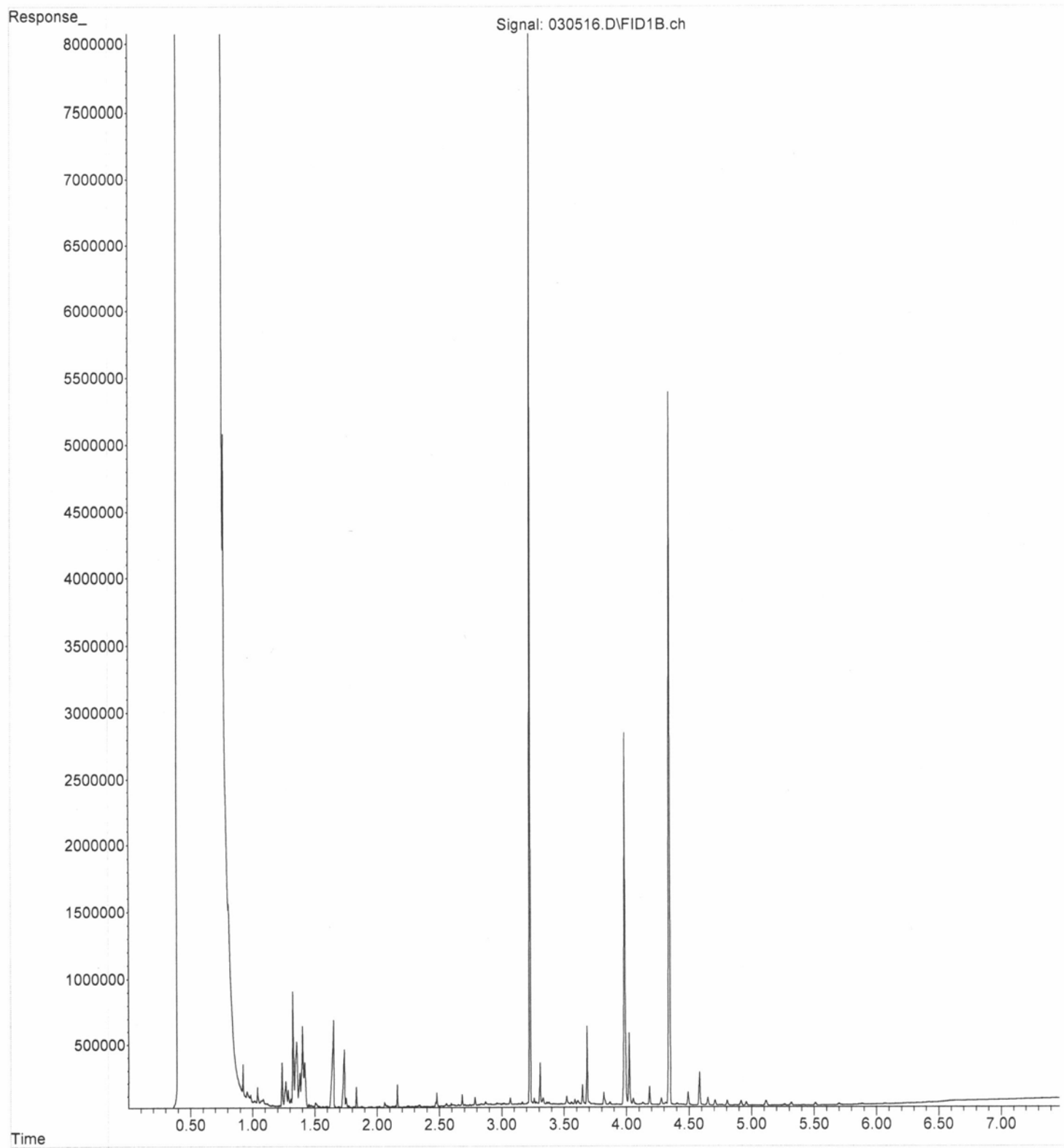
File :P:\Proc_GC14\03-05-25\030515.D
Operator : TL
Acquired : 05 Mar 2025 03:09 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-04
Misc Info :
Vial Number: 15

ERR



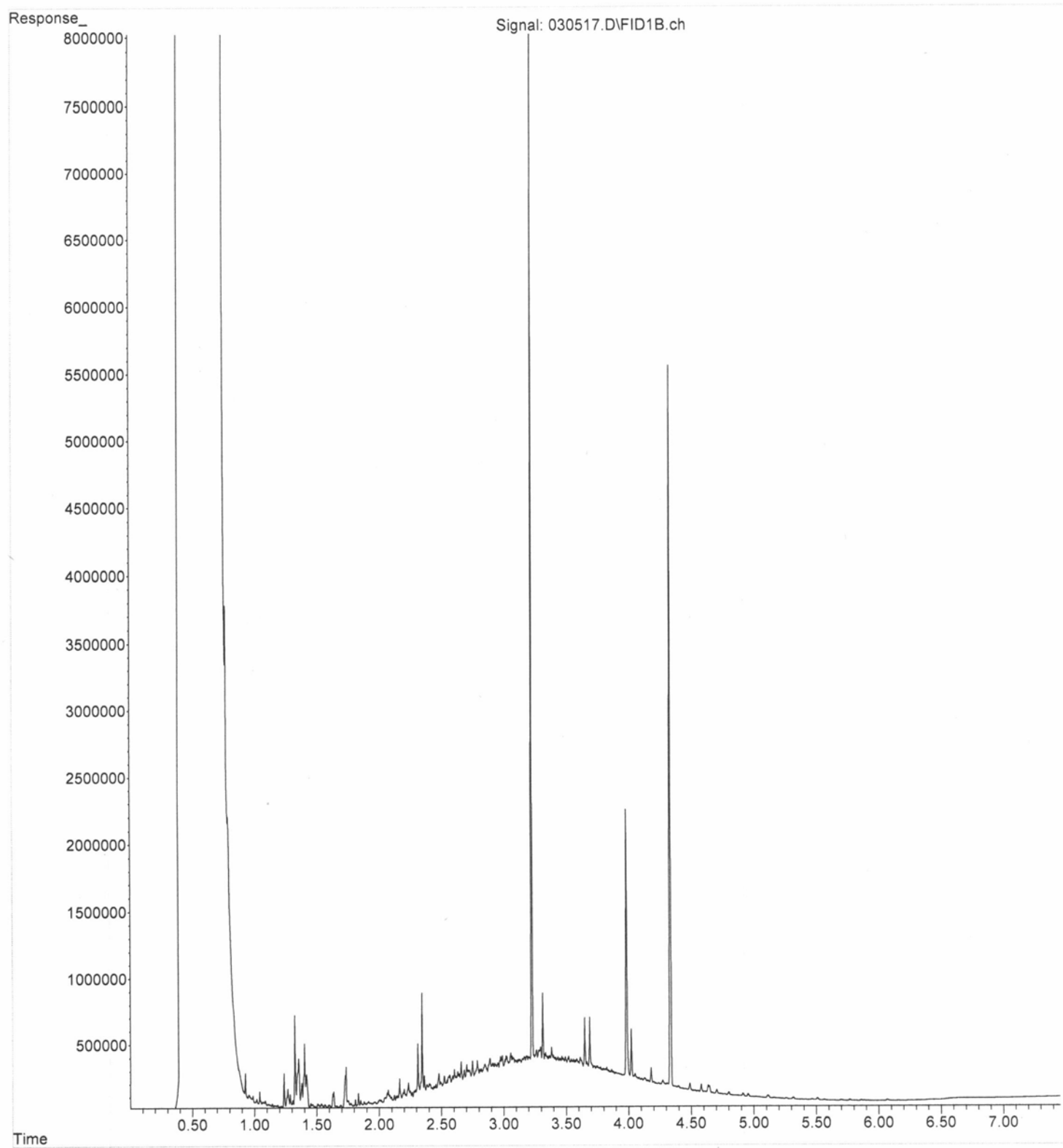
File :P:\Proc_GC14\03-05-25\030516.D
Operator : TL
Acquired : 05 Mar 2025 03:21 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-06
Misc Info :
Vial Number: 16

ERR



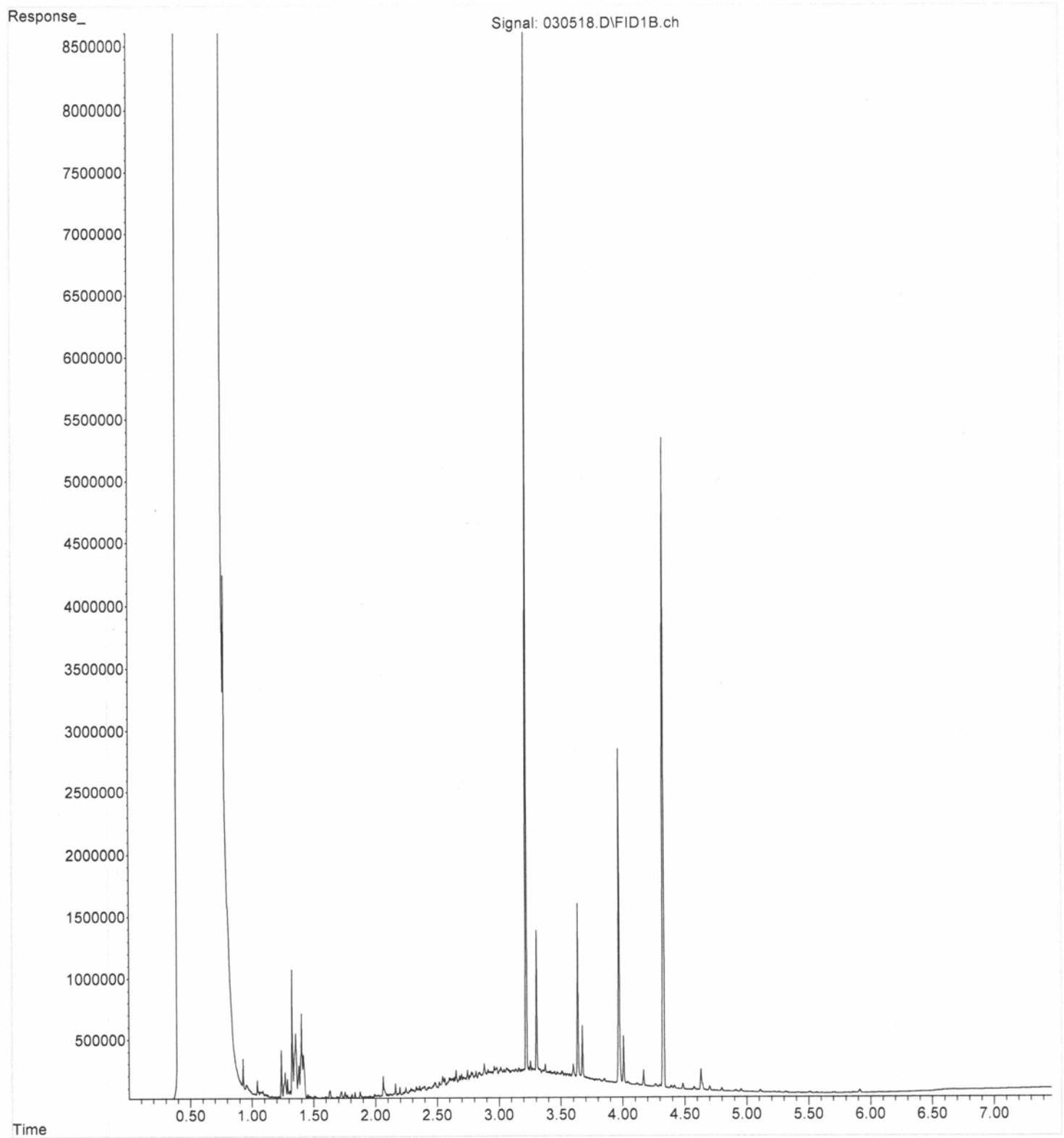
File :P:\Proc_GC14\03-05-25\030517.D
Operator : TL
Acquired : 05 Mar 2025 03:33 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-11
Misc Info :
Vial Number: 17

ERR



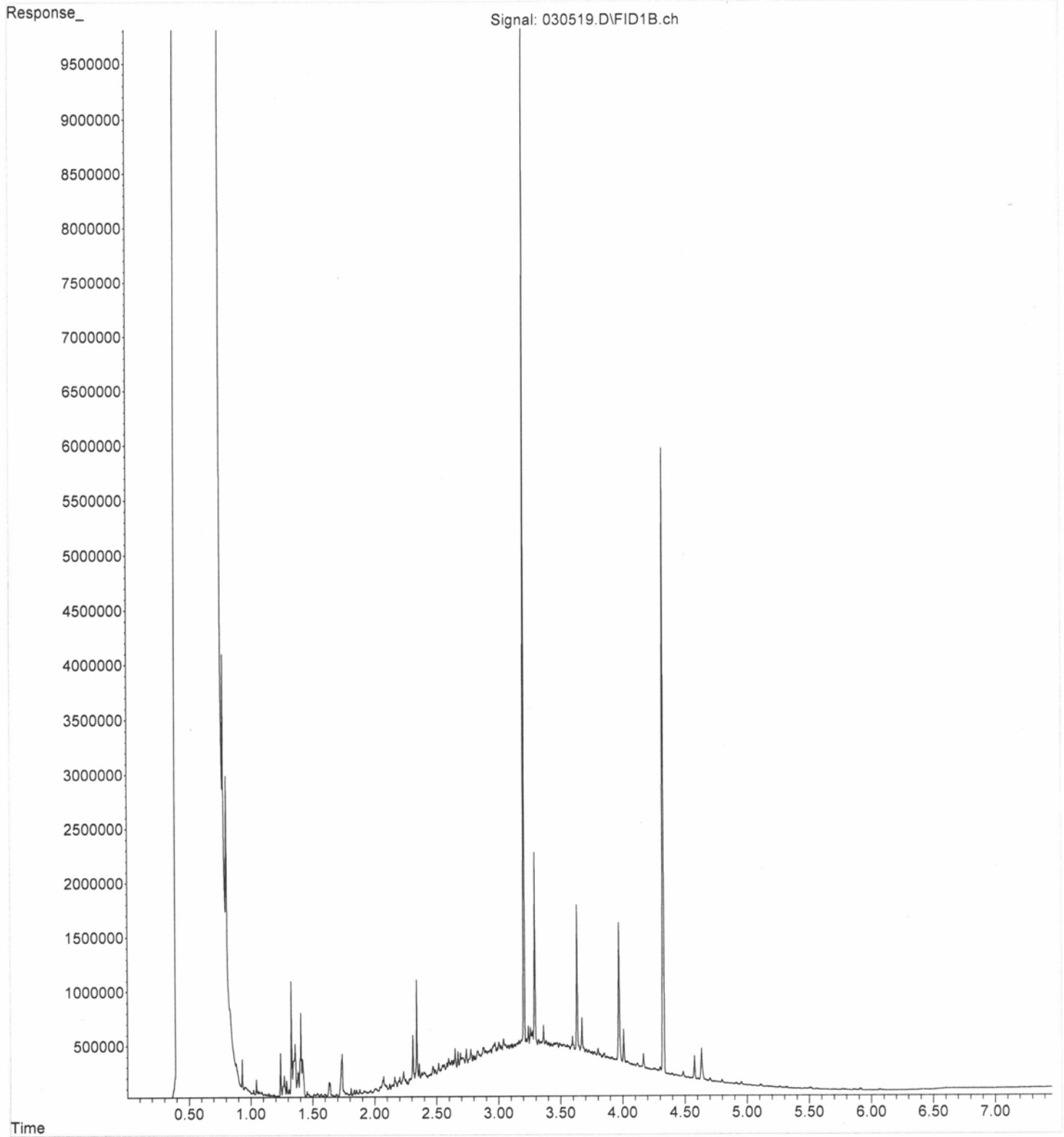
File :P:\Proc_GC14\03-05-25\030518.D
Operator : TL
Acquired : 05 Mar 2025 03:45 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-12
Misc Info :
Vial Number: 18

ERR



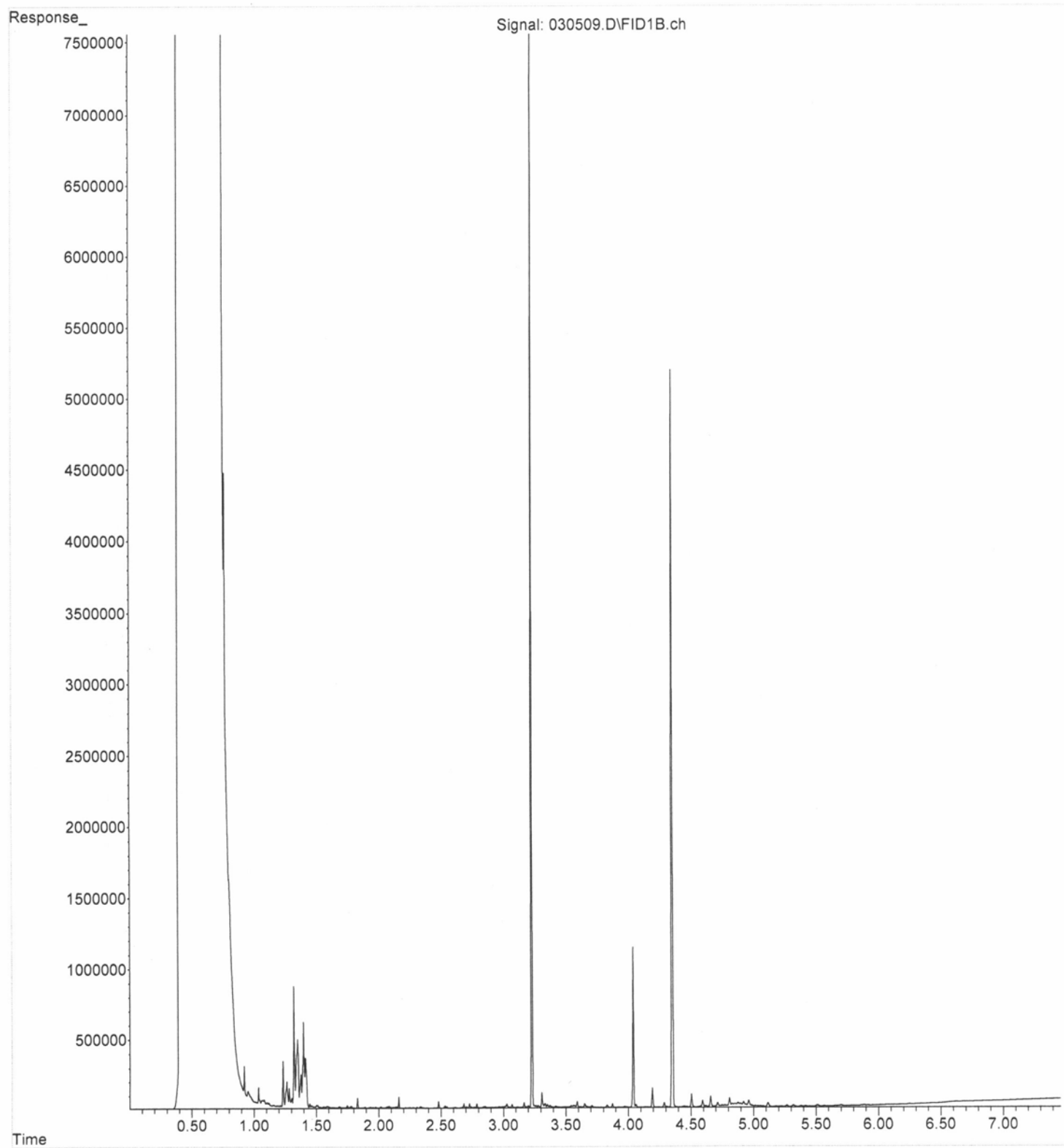
File :P:\Proc_GC14\03-05-25\030519.D
Operator : TL
Acquired : 05 Mar 2025 03:56 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 503011-17
Misc Info :
Vial Number: 19

ERR



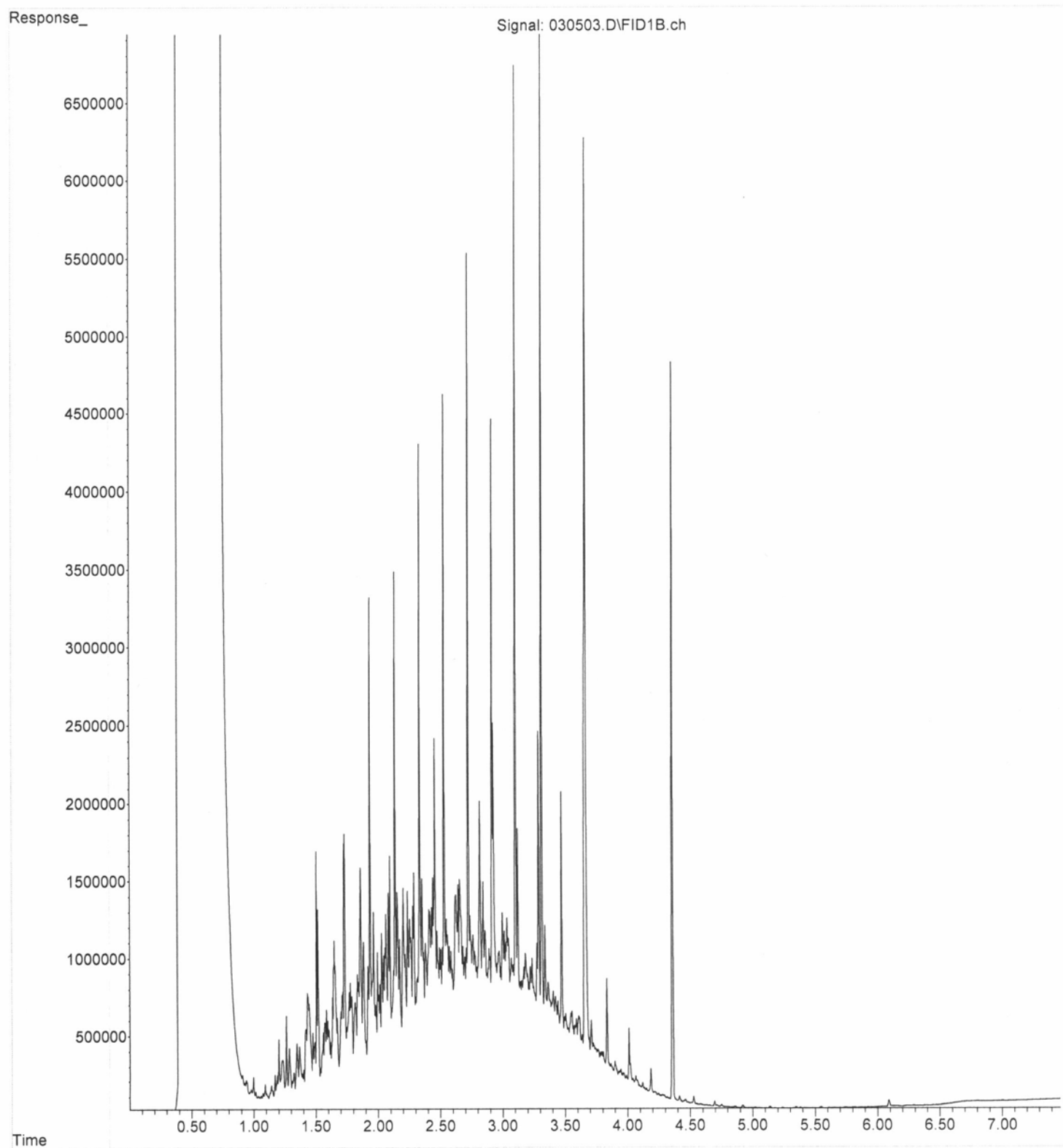
File :P:\Proc_GC14\03-05-25\030509.D
Operator : TL
Acquired : 05 Mar 2025 01:59 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 05-600 mb
Misc Info :
Vial Number: 9

ERR



File :P:\Proc_GC14\03-05-25\030503.D
Operator : TL
Acquired : 05 Mar 2025 08:24 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 74-61e
Misc Info :
Vial Number: 3

ERR



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

March 11, 2025

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

Pamela Osterhout, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Osterhout:

Included are the results from the testing of material submitted on March 3, 2025 from the Cantera/Time Oil, F&BI 503010 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Floyd Snider Lab Data, Kristin Anderson
FDS0311R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 3, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera/Time Oil, F&BI 503010 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
503010 -01	Gravity-030325
503010 -02	Clear Vault-030325
503010 -03	Inf Vault-030325
503010 -04	Trip Blank

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Gravity-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503010
Date Extracted:	03/07/25	Lab ID:	503010-01
Date Analyzed:	03/10/25	Data File:	031011.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.63
cis-1,2-Dichloroethene	2.6
Trichloroethene	16

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Clear Vault-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503010
Date Extracted:	03/07/25	Lab ID:	503010-02
Date Analyzed:	03/08/25	Data File:	030743.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	95	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	7.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Inf Vault-030325	Client:	Floyd-Snider
Date Received:	03/03/25	Project:	Cantera/Time Oil, F&BI 503010
Date Extracted:	03/07/25	Lab ID:	503010-03
Date Analyzed:	03/08/25	Data File:	030744.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.081
cis-1,2-Dichloroethene	2.0
Trichloroethene	91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera/Time Oil, F&BI 503010
Date Extracted:	03/07/25	Lab ID:	05-0524 mb
Date Analyzed:	03/08/25	Data File:	030742.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/25

Date Received: 03/03/25

Project: Cantera/Time Oil, F&BI 503010

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 503010-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	
				Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	103	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	10-211
Trichloroethene	ug/L (ppb)	10	7.3	100 b	35-149

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent		Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	106	106	64-142	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	102	101	70-130	1
Trichloroethene	ug/L (ppb)	10	104	104	70-130	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

503010

SAMPLE CHAIN OF CUSTODY

03/03/25 WJ2

Page # 1 of 1

Report To: Pamela Osterhout + Kristin

Company: Floyd Snider

Address: 1661 Union St, Suite 1000

City, State, ZIP: Seattle, WA

Phone: 805-2188 Email: labdata@floyd-snider.com

SAMPLERS (signature) *Pamela Osterhout*

PROJECT NAME: Camera Time Dil

PO #: *1000*

REMARKS: CVOCS = TCE, cis-1,2-DCE and V.C.
 Invoice TO: Pioneer
 Project specific RLS? Yes / No

TURNAROUND TIME

Standard turnaround

RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

Archive samples

Other _____

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED								Notes			
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	CVOCS 8260				
✓ Gravity - 030325	01A-C	3/3/25	13:00	W	3												
✓ Clear Vault - 030325	02	↓	14:00	L	3												
✓ Inf Vault - 030325	03	↓	14:45	L	3												
Trip Blank	04 A-B	-	-	Water	2												Added at lab AP 3/4/25

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Reinquished by: <i>[Signature]</i>		<i>meg mcconn</i>		<i>Floyd Snider</i>		3/3/25	17:09
Received by: <i>[Signature]</i>		<i>VJW4</i>		<i>FBI</i>		3-3-25	17:09
Reinquished by:				Samples received at		at 3:00	
Received by:							

Friedman & Bruya, Inc.
 5500 4th Ave S.
 Seattle WA 98108
 (206) 285-8282
 office@friedmanandbruya.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 503010 CLIENT Floyd Snider INITIALS/ DATE: AP 03/03/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 3 °C Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive? Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ Date: AP 03/04/25
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 0 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No Added Trip blank at lab. Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO
Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

June 13, 2025

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included is the amended report from the testing of material submitted on June 5, 2025 from the Cantera-TOC/Time Oil, F&BI 506097 project. Per your request, PCE has been removed from the report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Floyd Snider Data, Pamela Osterhout
FDS0612R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

June 12, 2025

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included are the results from the testing of material submitted on June 5, 2025 from the Cantera-TOC/Time Oil, F&BI 506097 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Floyd Snider Data, Pamela Osterhout
FDS0612R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 5, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera-TOC/Time Oil, F&BI 506097 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
506097 -01	01MW15-060525
506097 -02	01MW53R-060525
506097 -03	01MW58R-060525
506097 -04	01MW58R-D-060525
506097 -05	01MW85-060525
506097 -06	01MW107-060525
506097 -07	Trip Blank

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25
Date Received: 06/05/25
Project: Cantera-TOC/Time Oil, F&BI 506097
Date Extracted: 06/06/25
Date Analyzed: 06/06/25

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 50-150)
01MW58R-060525 506097-03	530 x	<210	112
01MW58R-D-060525 506097-04	690 x	<220	131
Method Blank 05-1385 MB2	<50	<200	120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW15-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	506097-01
Date Analyzed:	06/10/25	Data File:	061039.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	107	84	115
4-Bromofluorobenzene	97	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	89
cis-1,2-Dichloroethene	9.0
Trichloroethene	1.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW53R-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	506097-02
Date Analyzed:	06/10/25	Data File:	061036.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.5
cis-1,2-Dichloroethene	3.4
Trichloroethene	22

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	506097-03 1/10
Date Analyzed:	06/10/25	Data File:	061037.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	92
cis-1,2-Dichloroethene	510
Trichloroethene	290

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-D-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	506097-04 1/10
Date Analyzed:	06/10/25	Data File:	061038.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	90
cis-1,2-Dichloroethene	490
Trichloroethene	280

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW85-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	506097-05 1/10
Date Analyzed:	06/10/25	Data File:	061040.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	102	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	46
cis-1,2-Dichloroethene	1,200
Trichloroethene	4.9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW107-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	506097-06
Date Analyzed:	06/10/25	Data File:	061035.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	106	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	0.057

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera-TOC/Time Oil, F&BI 506097
Date Extracted:	06/10/25	Lab ID:	05-1342 mb
Date Analyzed:	06/10/25	Data File:	061008.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25

Date Received: 06/05/25

Project: Cantera-TOC/Time Oil, F&BI 506097

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	92	65-151	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25

Date Received: 06/05/25

Project: Cantera-TOC/Time Oil, F&BI 506097

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 506097-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	97	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	101	10-211
Trichloroethene	ug/L (ppb)	10	0.057	91	35-149

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	102	100	64-142	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	99	70-130	4
Trichloroethene	ug/L (ppb)	10	96	93	70-130	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

506097

SAMPLE CHAIN OF CUSTODY

06/05/85 T2/VW3

Report To Kristin Anderson + Pamela Osterhout

SAMPLERS (signature) Pam Osterhout

Page # 1 of 1

Company Floyd Snider

Address 1001 Union St, Suite 1000

PROJECT NAME Canera-TOL Time 01

PO #

City, State, ZIP Seattle, WA 98102

Phone 206 292-2078 Email labeledata@FloydSnider.com

REMARKS Select QUDS - FTS TCE VC AS 12 DCE

INVOICE TO Pioneer

TURNAROUND TIME

Standard turnaround

RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

Archive samples

Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082		
DIMW15-060525	01A-C	6/5/25	09:55	GW	3									Do not report PCE per PO 06/12/25 ME
DIMW53R-060525	02 J	6/5/25	08:55		3									
DIMW58R-060525	03 A-D		10:32		4									
DIMW58R-D-060525	04 J		10:45		4									
DIMW85-060525	05 A-C		09:32		3									
DIMW107-060525	06 J		08:42		3									
Trip Blank	07 A-B	-	-	Water	2									Added at lab AP 6/5

Friedman & Bruya, Inc.
 5500 4th Ave S.
 Seattle WA 98108
 (206) 285-8282
 office@friedmanandbruya.com

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <u>[Signature]</u>		<u>Pamela Osterhout</u>		<u>Floyd Snider</u>		6/5/25	1252
Received by: <u>[Signature]</u>		<u>Phan Phan</u>		<u>FEBI</u>		6/5/25	1252
Relinquished by:							
Received by:							

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 506097 CLIENT Floyd Snider INITIALS/ DATE: (NA) 6/5/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive?
 Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ Date: AP 6/5/25
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 0 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No Added Trip blank at lab.
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____
**Fill out Green manifolds billing sheet

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

June 13, 2025

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included is the amended report from the testing of material submitted on June 5, 2025 from the Cantera-TOC/Time Oil, F&BI 506096 project. Per your request, PCE has been removed from the report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Pamela Osterhout
FDS0612R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

June 12, 2025

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included are the results from the testing of material submitted on June 5, 2025 from the Cantera-TOC/Time Oil, F&BI 506096 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Pamela Osterhout
FDS0612R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 5, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera-TOC/Time Oil, F&BI 506096 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

506096 -01

506096 -02

506096 -03

Floyd-Snider

INFLUENT VAULT-060525

CLEAR VAULT-060525

GRAVITY WELL-060525

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25
Date Received: 06/05/25
Project: Cantera-TOC/Time Oil, F&BI 506096
Date Extracted: 06/06/25
Date Analyzed: 06/06/25

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
GRAVITY WELL-060525 506096-03	220 x	<210	116
Method Blank 05-1385 MB2	<50	<200	120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	INFLUENT VAULT-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506096
Date Extracted:	06/06/25	Lab ID:	506096-01
Date Analyzed:	06/06/25	Data File:	060635.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.15
cis-1,2-Dichloroethene	4.1
Trichloroethene	44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	CLEAR VAULT-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506096
Date Extracted:	06/06/25	Lab ID:	506096-02
Date Analyzed:	06/06/25	Data File:	060633.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	104	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	5.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	GRAVITY WELL-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506096
Date Extracted:	06/06/25	Lab ID:	506096-03
Date Analyzed:	06/06/25	Data File:	060634.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	GRAVITY WELL-060525	Client:	Floyd-Snider
Date Received:	06/05/25	Project:	Cantera-TOC/Time Oil, F&BI 506096
Date Extracted:	06/06/25	Lab ID:	506096-03 1/10
Date Analyzed:	06/10/25	Data File:	061020.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	94	68	139
4-Bromofluorobenzene	101	62	136

Compounds:	Concentration ug/L (ppb)
cis-1,2-Dichloroethene	240
Trichloroethene	250

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera-TOC/Time Oil, F&BI 506096
Date Extracted:	06/06/25	Lab ID:	05-1330 mb
Date Analyzed:	06/06/25	Data File:	060608.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	99	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera-TOC/Time Oil, F&BI 506096
Date Extracted:	06/10/25	Lab ID:	05-1342 mb
Date Analyzed:	06/10/25	Data File:	061008.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25

Date Received: 06/05/25

Project: Cantera-TOC/Time Oil, F&BI 506096

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	92	65-151	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25

Date Received: 06/05/25

Project: Cantera-TOC/Time Oil, F&BI 506096

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 506094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	122	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	108	10-211
Trichloroethene	ug/L (ppb)	10	<0.05	104	35-149

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	96	99	64-142	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	101	70-130	2
Trichloroethene	ug/L (ppb)	10	98	99	70-130	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/12/25

Date Received: 06/05/25

Project: Cantera-TOC/Time Oil, F&BI 506096

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 506097-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	97	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	101	10-211
Trichloroethene	ug/L (ppb)	10	0.057	91	35-149

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	102	100	64-142	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	99	70-130	4
Trichloroethene	ug/L (ppb)	10	96	93	70-130	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 506096 CLIENT Floyd Snider

INITIALS/ DATE: (NP) 6/5/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive?
 Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ Date: AP 6/5/25
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 0 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____

**Fill out Green manifolds billing sheet

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

September 23, 2025

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included are the results from the testing of material submitted on September 17, 2025 from the Cantera/Time Oil, F&BI 509293 project. There are 30 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Pamela Osterhout
FDS0923R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 17, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera/Time Oil, F&BI 509293 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
509293 -01	MW05-091625
509293 -02	MW06-091625
509293 -03	01MW15-091625
509293 -04	01MW19R-091625
509293 -05	01MW46-091625
509293 -06	01MW53R-091625
509293 -07	01MW56-091625
509293 -08	01MW58R-091625
509293 -09	01MW84-091625
509293 -10	01MW84-D-091625
509293 -11	01MW85-091625
509293 -12	01MW107-091625
509293 -13	01MW40-091725
509293 -14	02MW04R-091725
509293 -15	02MW07-091725
509293 -16	02MW17-091725
509293 -17	02MW19-091725
509293 -18	02MW20R-091725

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25
Date Received: 09/17/25
Project: Cantera/Time Oil, F&BI 509293
Date Extracted: 09/17/25
Date Analyzed: 09/18/25

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-G_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
01MW19R-091625 509293-04	750	133
01MW84-091625 509293-09	1,400	118
01MW84-D-091625 509293-10	1,300	107
01MW40-091725 509293-13	<100	98
02MW04R-091725 509293-14	<100	110
02MW07-091725 509293-15	<100	111
02MW17-091725 509293-16	<100	105
02MW19-091725 509293-17	<100	103
02MW20R-091725 509293-18	<100	113
Method Blank 05-2302 MB	<100	111

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25
Date Received: 09/17/25
Project: Cantera/Time Oil, F&BI 509293
Date Extracted: 09/18/25
Date Analyzed: 09/18/25

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 50-150)
01MW19R-091625 509293-04	730 x	<200	122
01MW58R-091625 509293-08	500 x	<200	118
01MW84-091625 509293-09	690 x	<200	106
01MW84-D-091625 509293-10	710 x	<200	105
01MW40-091725 509293-13	760 x	<200	90
02MW04R-091725 509293-14	<50	<200	118
02MW07-091725 509293-15	95 x	<200	100
02MW17-091725 509293-16	<50	<200	110
02MW19-091725 509293-17	91 x	<200	117
02MW20R-091725 509293-18	170 x	<200	115
Method Blank 05-2375 MB	<50	<200	112

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW05-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-01 1/10
Date Analyzed:	09/18/25	Data File:	091847.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	160
cis-1,2-Dichloroethene	750
Trichloroethene	12
Benzene	<3.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW06-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-02 1/10
Date Analyzed:	09/19/25	Data File:	091851.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.6
cis-1,2-Dichloroethene	130
Trichloroethene	260
Benzene	<3.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW15-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-03
Date Analyzed:	09/19/25	Data File:	091848.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	71	132
Toluene-d8	100	68	139
4-Bromofluorobenzene	104	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	35
cis-1,2-Dichloroethene	16
Trichloroethene	0.99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW19R-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-04
Date Analyzed:	09/18/25	Data File:	091842.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	100	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	1.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW46-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-05 1/10
Date Analyzed:	09/19/25	Data File:	091850.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	104	68	139
4-Bromofluorobenzene	106	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	220
cis-1,2-Dichloroethene	580
Trichloroethene	45
Benzene	<3.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW53R-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-06
Date Analyzed:	09/18/25	Data File:	091845.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	106	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	6.3
cis-1,2-Dichloroethene	2.8
Trichloroethene	17

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW56-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-07
Date Analyzed:	09/18/25	Data File:	091844.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.6
cis-1,2-Dichloroethene	<1
Trichloroethene	0.72

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-08 1/10
Date Analyzed:	09/19/25	Data File:	091849.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	105	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	54
cis-1,2-Dichloroethene	310
Trichloroethene	380

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW85-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-11 1/10
Date Analyzed:	09/18/25	Data File:	091846.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	101	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	61
cis-1,2-Dichloroethene	1,200
Trichloroethene	4.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW107-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-12
Date Analyzed:	09/18/25	Data File:	091843.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	104	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	0.097

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW40-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-13
Date Analyzed:	09/18/25	Data File:	091836.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	100	68	139
4-Bromofluorobenzene	105	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW04R-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-14
Date Analyzed:	09/18/25	Data File:	091837.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	110	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW07-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-15
Date Analyzed:	09/18/25	Data File:	091838.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	101	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW17-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-16
Date Analyzed:	09/18/25	Data File:	091839.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	100	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW19-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-17
Date Analyzed:	09/18/25	Data File:	091840.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	101	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW20R-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-18
Date Analyzed:	09/18/25	Data File:	091841.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	106	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	05-2354 mb
Date Analyzed:	09/18/25	Data File:	091833.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	107	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05
Benzene	<0.35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client Sample ID:	02MW07-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-15
Date Analyzed:	09/18/25	Data File:	509293-15.106
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	3.9
---------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client Sample ID:	02MW17-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-16
Date Analyzed:	09/18/25	Data File:	509293-16.107
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client Sample ID:	02MW19-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-17
Date Analyzed:	09/18/25	Data File:	509293-17.108
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	3.8
---------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client Sample ID:	02MW20R-091725	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	509293-18
Date Analyzed:	09/18/25	Data File:	509293-18.109
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	7.3
---------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Cantera/Time Oil, F&BI 509293
Date Extracted:	09/18/25	Lab ID:	I5-807 mb2
Date Analyzed:	09/18/25	Data File:	I5-807 mb2.062
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25

Date Received: 09/17/25

Project: Cantera/Time Oil, F&BI 509293

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-G_x**

Laboratory Code: 509243-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	94	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25

Date Received: 09/17/25

Project: Cantera/Time Oil, F&BI 509293

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	120	116	65-151	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25

Date Received: 09/17/25

Project: Cantera/Time Oil, F&BI 509293

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	101	103	43-149	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	101	100	70-130	1
Benzene	ug/L (ppb)	10	100	100	70-130	0
Trichloroethene	ug/L (ppb)	10	97	97	70-130	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25

Date Received: 09/17/25

Project: Cantera/Time Oil, F&BI 509293

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 6020B**

Laboratory Code: 509268-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	13.0	85 b	92 b	75-125	8 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	92	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

509293

SAMPLE CHAIN OF CUSTODY

01-17-25

W5/L3/13

Page # 1 of 2

Report To Kristin Anderson + Pamela Osterhoff
 Company Flydd Snider
 Address 101 Union St, Suite 100
 City, State, ZIP Seattle, WA 98101
 Phone 206-292-2078 Email pkristin@flyddsnider.com

SAMPLERS (signature) [Signature]
 PROJECT NAME Cantona-TOC Time 0:11
 PO # _____
 REMARKS Select CUDCS: TCE, VC, cis-1,2 DCE
 Protect specific RIUs? Yes / No _____
 INVOICE TO Pioneer

TURNAROUND TIME
 Standard turnaround
 RUSH
 Rush charges authorized by: _____
 SAMPLE DISPOSAL
 Archive samples
 Other
 Default Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select CUDCS by 8260D	Benzene 8260D			
MW05-091025	01 A.C	09/10/25	15:30	GW	3							X	X				
MW04-091025	02		15:05		3							X	X				
01MW15-091025	03		14:45		3							X					
01MW19R-091025	04 A-D		13:00		4	X	X						X				
01MW40-091025	05 A.C		12:57		3							X	X				
01MWS3R-091025	06		9:15		3							X					
01MWSV-091025	07		13:50		3							X	X				
01MWSQR-091025	08 A-D		11:55		4	X						X					
01MW84-091025	09 A-D		14:00		4	X	X										
01MW84-D-091025	10 A-D		14:20		4	X	X										

Relinquished by: [Signature] SIGNATURE
 PRINT NAME Meg McEannin
 COMPANY Flydd Snider
 DATE 9/17/25 TIME 1237
 Received by: [Signature]
 PRINT NAME Eric Young
 COMPANY FIR
 DATE 9/17/25 TIME 1237
 Received by: _____
 Samples received at 4 °C

Friedman & Bruya, Inc.
 5500 4th Ave S.
 Seattle WA 98108
 (206) 285-8282
 office@friedmanandbruya.com

509293

SAMPLE CHAIN OF CUSTODY

09-17-25

Page # 1 of 2
 W5/L3/IS3
 2

Report To: Kristin Anderson + Pamela Ditzel
 Company: Flyyd Snider
 Address: 101 Union St, Suite 100
 City, State, ZIP: Seattle, WA 98101
 Phone: 206-292-2098 Email: flyydata@flyydnider.com

SAMPLERS (signature) [Signature]
 PROJECT NAME: Cantra / Time 0,1
 REMARKS: Select CVOCS: TCE, VC, cis-1,2-DCE
 Project specific RIs? - Yes / No
 INVOICE TO: Pioneer

TURNAROUND TIME
 Standard turnaround
 RUSH
 Rush charges authorized by: _____
 SAMPLE DISPOSAL
 Archive samples
 Other
 Default Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select CVOCS by 8260D	Benzene by 8260D	Total Arsenic by 6020B		
01MW05-091025	11 A-C	9/16/25	10:35	GW	3								X				
01MW107-091025	12 A-C		11:30	GW	3								X				
01MW107-091025			10:55		3												
01MW4D-091725	13 A-D	9/17/25	9:00	GW	4	X	X						X				
02MW04R-091725	14 A-D		11:00	GW	4	X	X						X				
02MW03-091725	15 A-E		10:10	GW	5	X	X						X				
02MW17-091725	16		11:10	GW	5	X	X						X				
02MW19-091725	17		9:10	GW	5	X	X						X				
02MW20R-091725	18		10:05	GW	5	X	X						X				

Friedman & Bryya, Inc.
 5500 4th Ave S.
 Seattle WA 98108
 (206) 285-8282
 office@friedmanandbryya.com

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <u>[Signature]</u>		<u>Meg means</u>		<u>Flyyd Snider</u>		9/17/25	1237
Received by: <u>[Signature]</u>		<u>Eric Powers</u>		<u>FRB</u>		9/17/25	1237
Relinquished by:							
Received by:							

Samples received at 4 °C

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 509293 CLIENT FOS

INITIALS/ DATE: (NP) 9/17/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive?
 Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ Date: (NP) 9/17
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

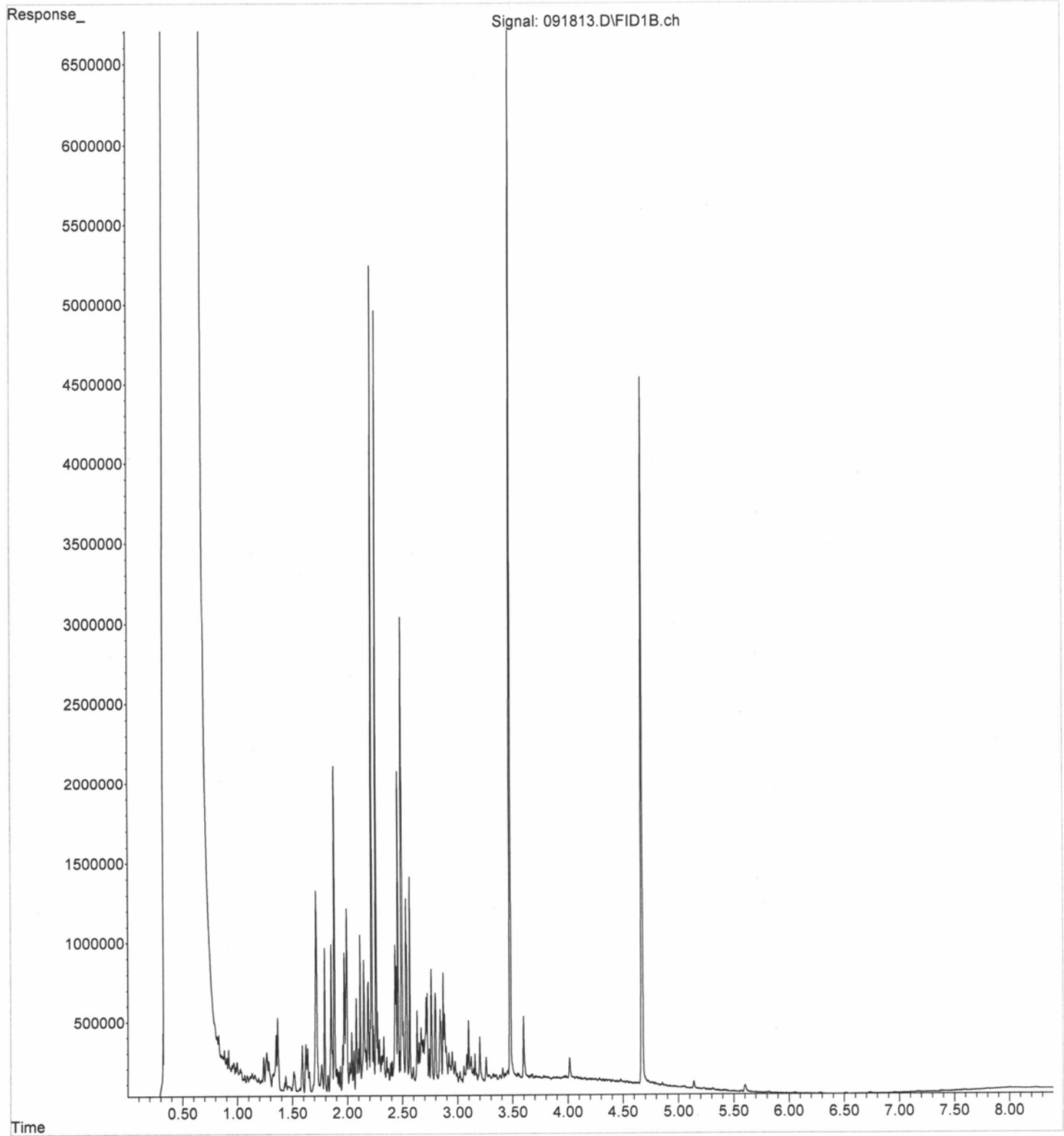
Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____

**Fill out Green manifolds billing sheet

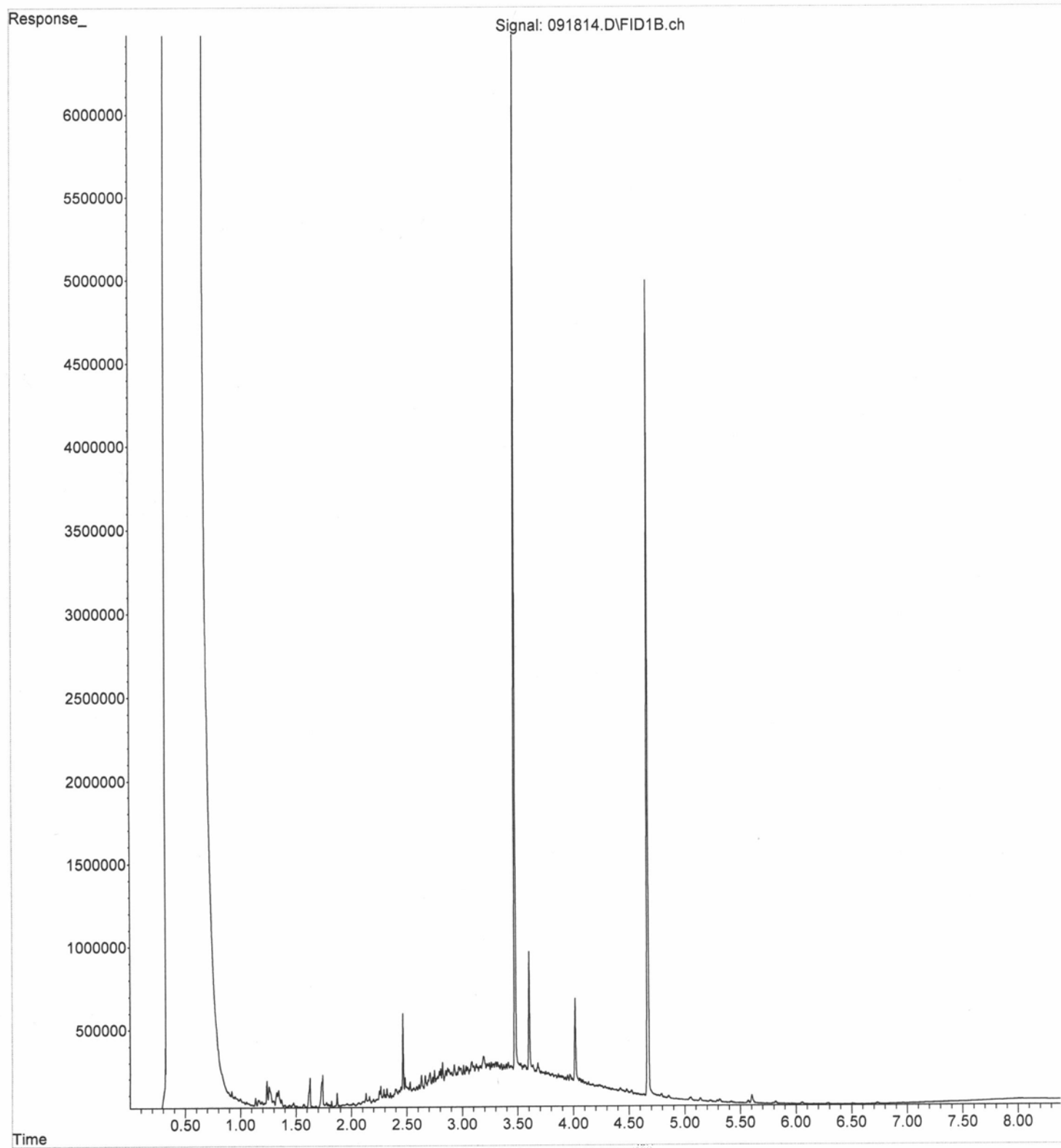
File : P:\Proc_GC14\09-18-25\091813.D
Operator : TL
Acquired : 18 Sep 2025 11:48 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-04
Misc Info :
Vial Number: 15

ERR



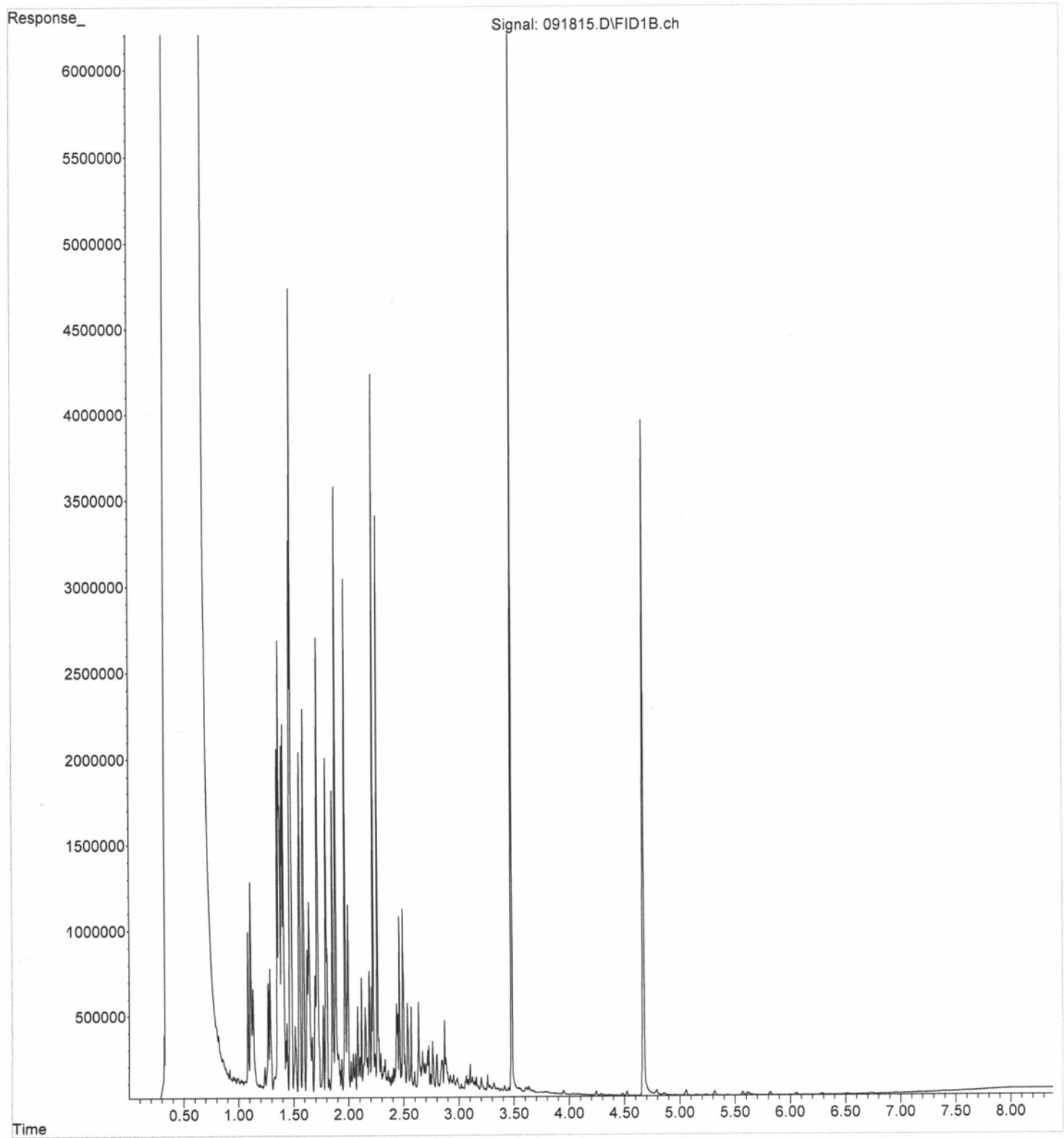
File :P:\Proc_GC14\09-18-25\091814.D
Operator : TL
Acquired : 18 Sep 2025 12:01 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-08
Misc Info :
Vial Number: 16

ERR



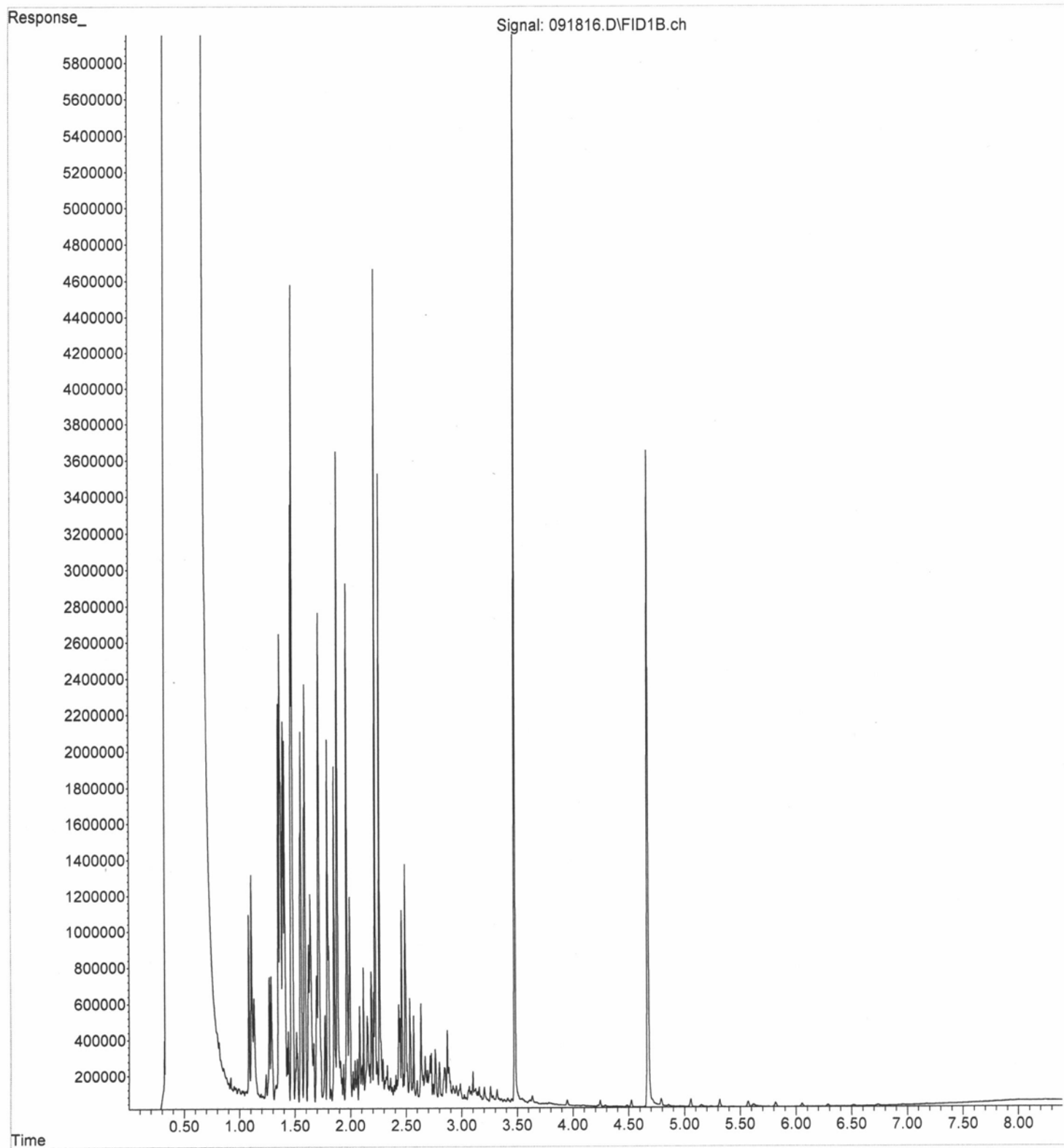
File :P:\Proc_GC14\09-18-25\091815.D
Operator : TL
Acquired : 18 Sep 2025 12:14 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-09
Misc Info :
Vial Number: 17

ERR



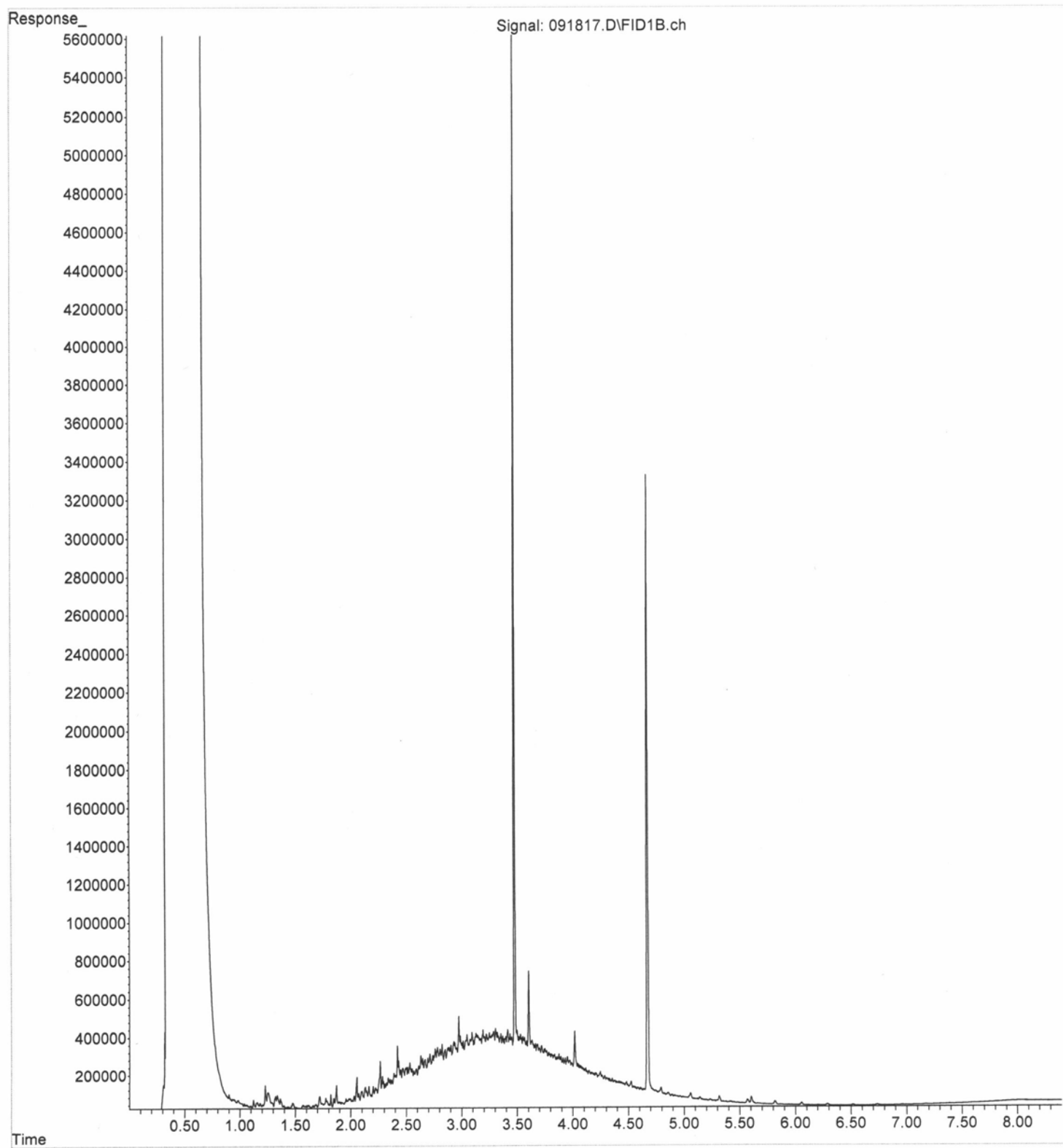
File : P:\Proc_GC14\09-18-25\091816.D
Operator : TL
Acquired : 18 Sep 2025 12:27 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-10
Misc Info :
Vial Number: 18

ERR



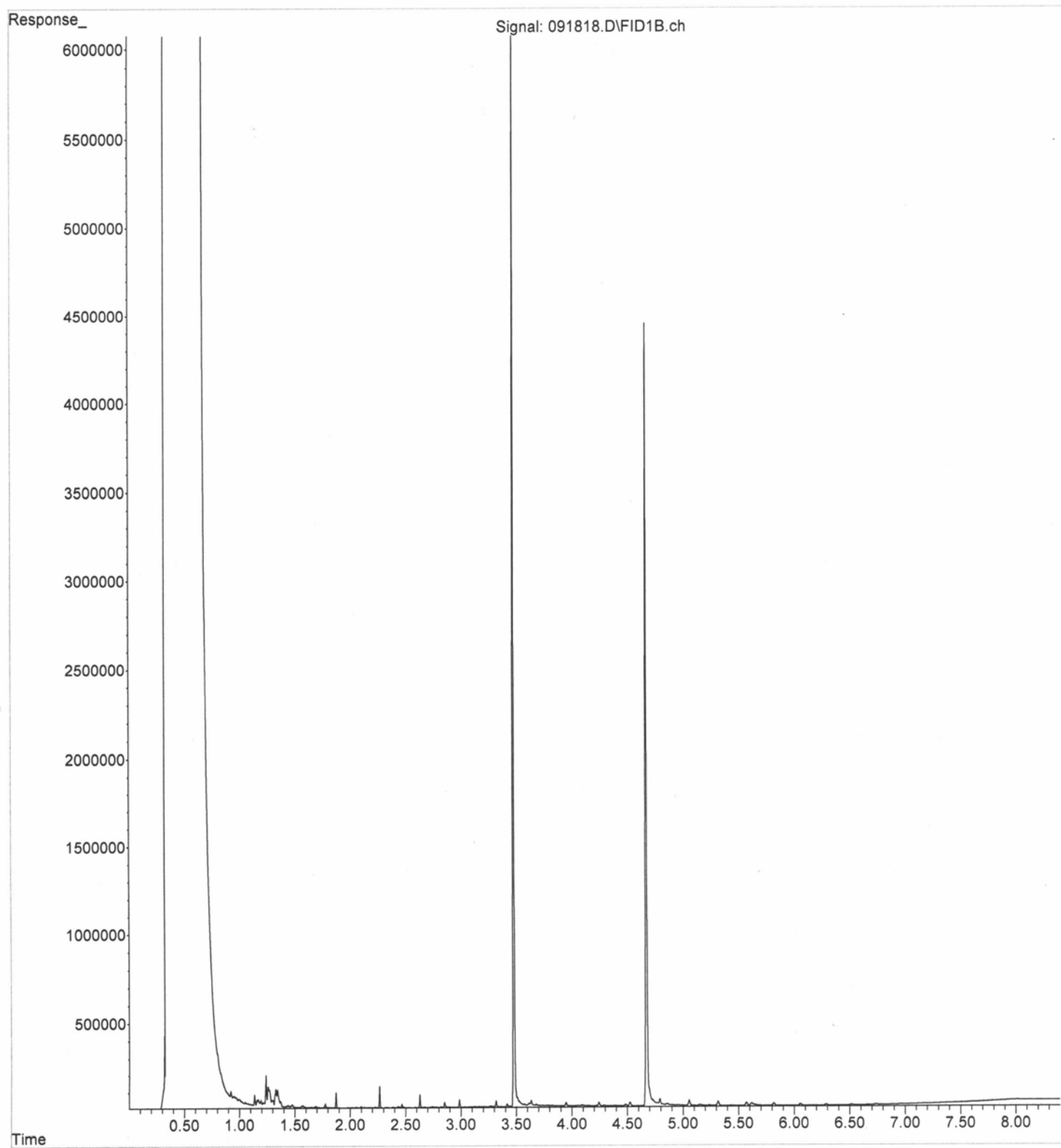
File : P:\Proc_GC14\09-18-25\091817.D
Operator : TL
Acquired : 18 Sep 2025 12:40 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-13
Misc Info :
Vial Number: 19

ERR



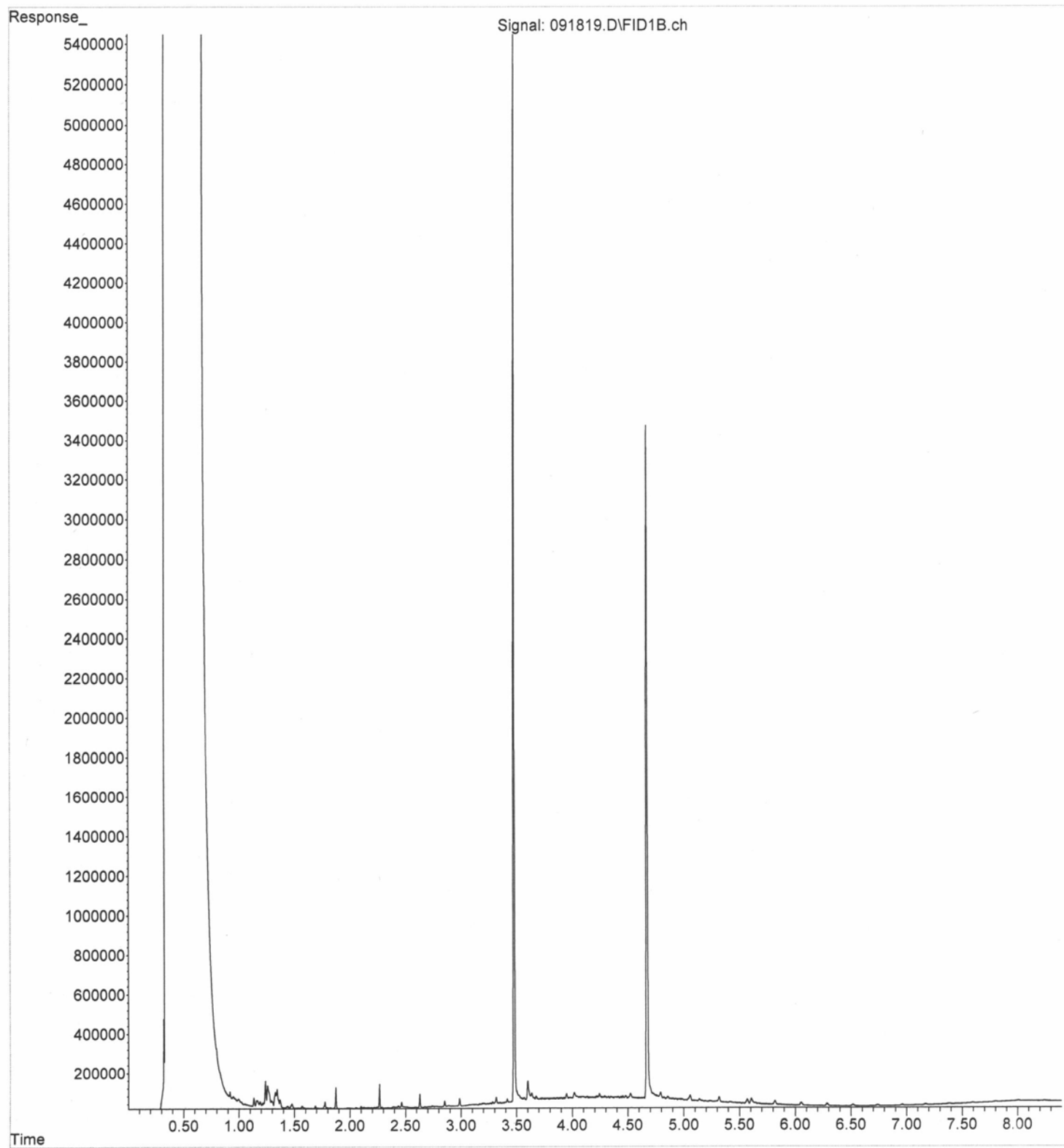
File : P:\Proc_GC14\09-18-25\091818.D
Operator : TL
Acquired : 18 Sep 2025 12:53 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-14
Misc Info :
Vial Number: 20

ERR



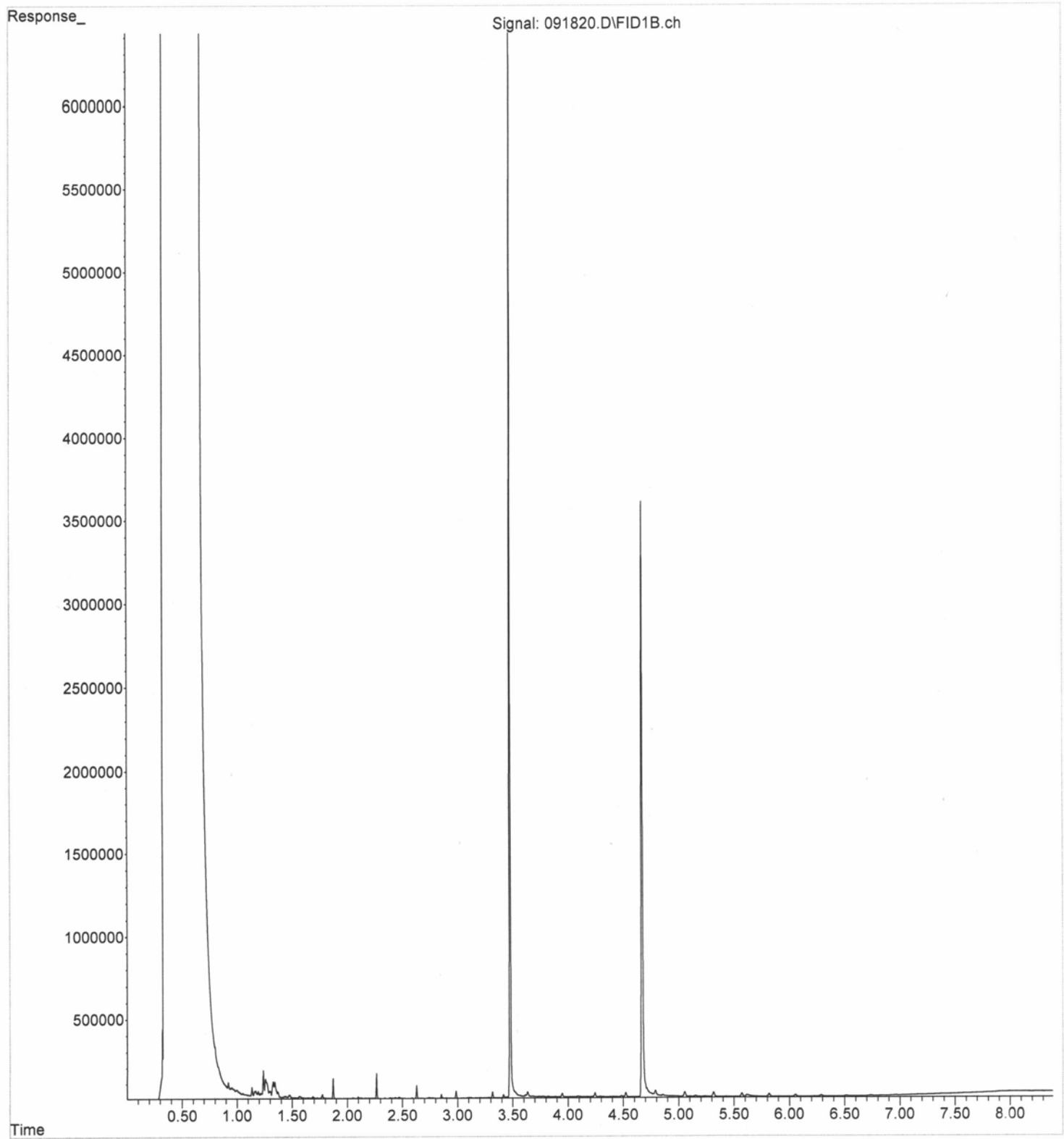
File : P:\Proc_GC14\09-18-25\091819.D
Operator : TL
Acquired : 18 Sep 2025 01:06 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-15
Misc Info :
Vial Number: 21

ERR



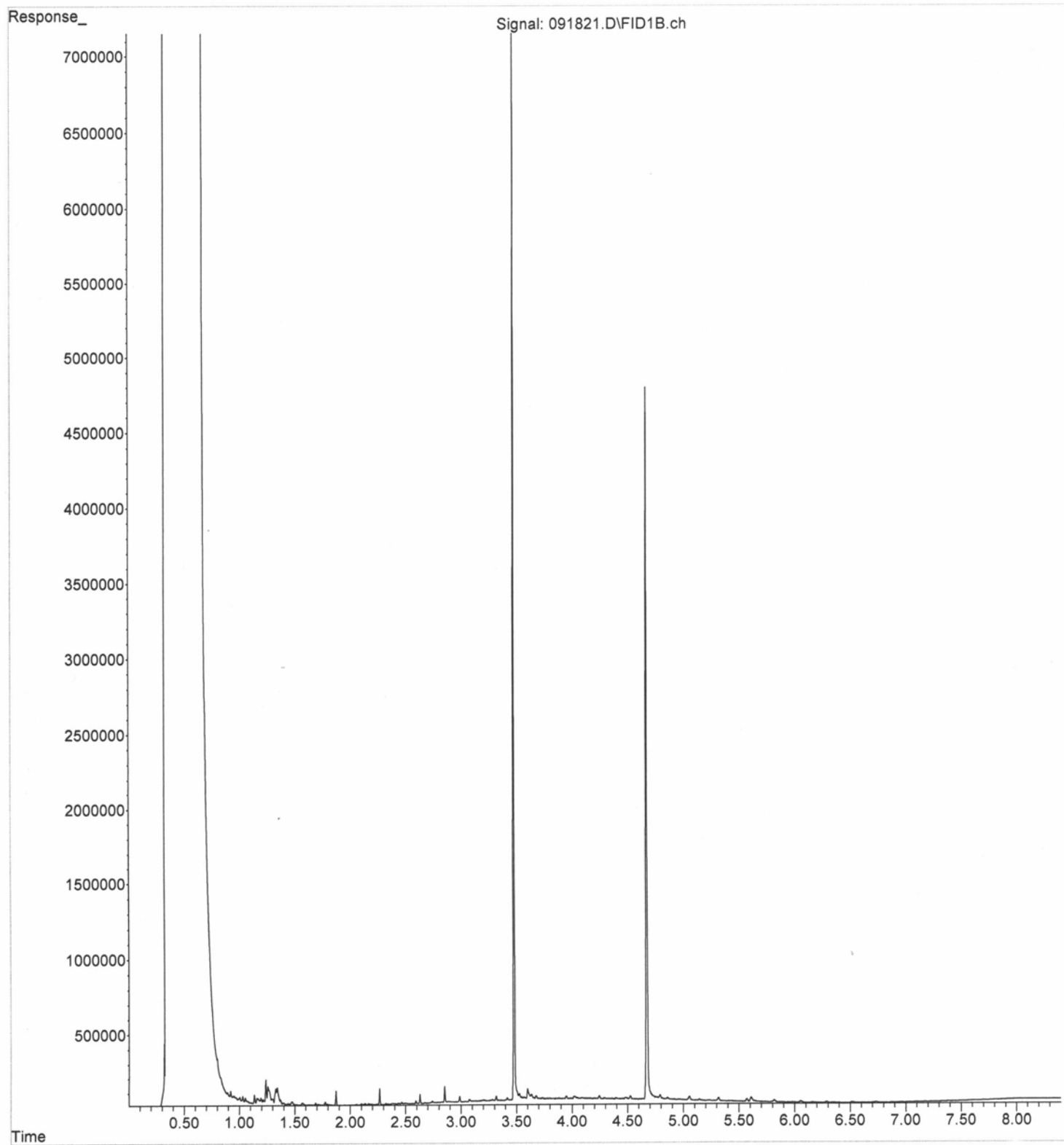
File : P:\Proc_GC14\09-18-25\091820.D
Operator : TL
Acquired : 18 Sep 2025 01:19 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-16
Misc Info :
Vial Number: 22

ERR



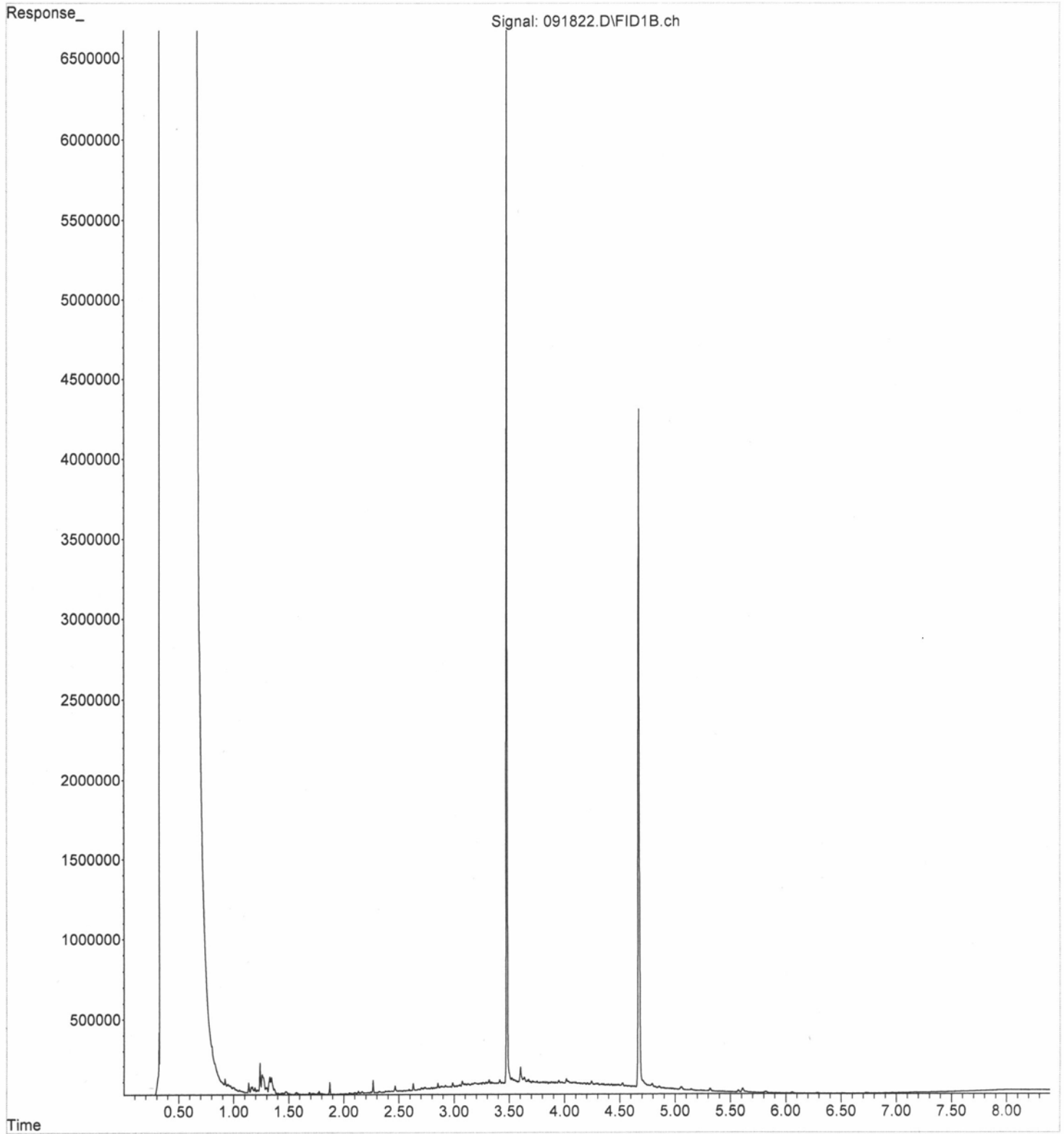
File : P:\Proc_GC14\09-18-25\091821.D
Operator : TL
Acquired : 18 Sep 2025 01:32 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-17
Misc Info :
Vial Number: 23

ERR



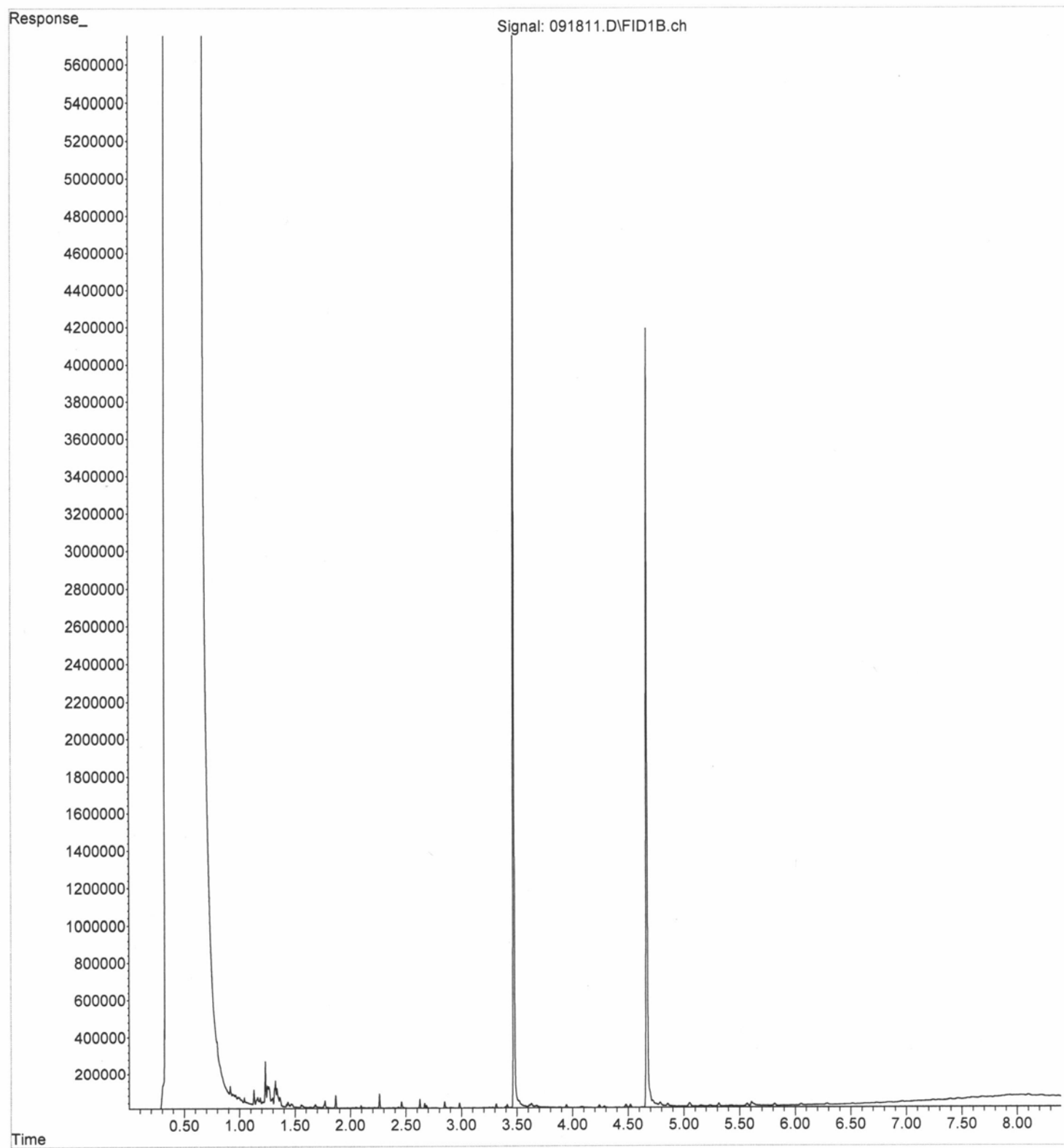
File :P:\Proc_GC14\09-18-25\091822.D
Operator : TL
Acquired : 18 Sep 2025 01:45 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 509293-18
Misc Info :
Vial Number: 24

ERR



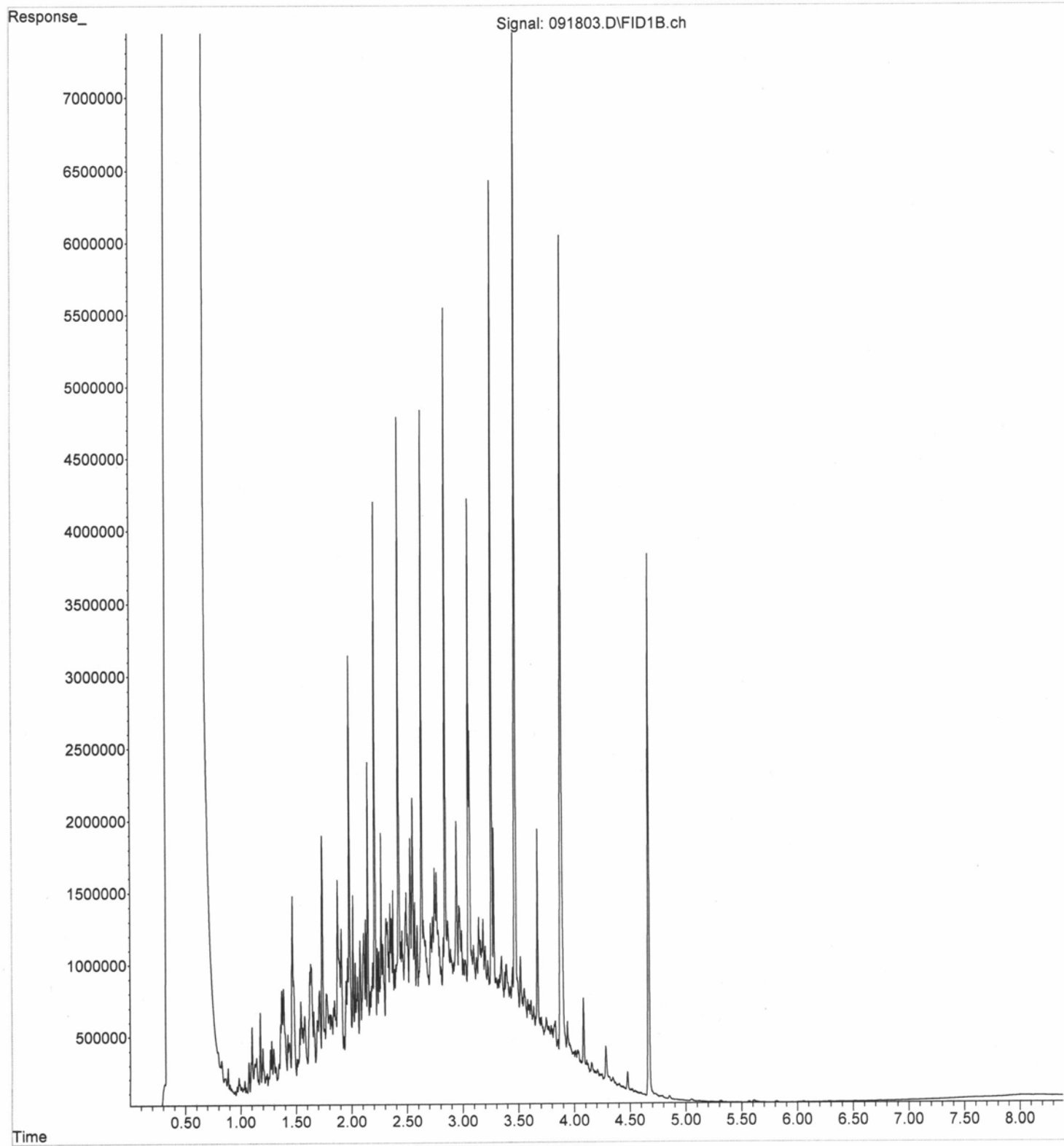
File :P:\Proc_GC14\09-18-25\091811.D
Operator : TL
Acquired : 18 Sep 2025 11:23 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 05-2375 mb
Misc Info :
Vial Number: 13

ERR



File : P:\Proc_GC14\09-18-25\091803.D
Operator : TL
Acquired : 18 Sep 2025 08:27 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 76-54I
Misc Info :
Vial Number: 3

ERR



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

September 23, 2025

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included are the results from the testing of material submitted on September 17, 2025 from the Cantera/Time Oil, F&BI 509292 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Floyd Snider Lab Data, Pamela Osterhout
FDS0923R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 17, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera/Time Oil, F&BI 509292 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

509292 -01

Floyd-Snider

GRAVITY WELL-091625

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	GRAVITY WELL-091625	Client:	Floyd-Snider
Date Received:	09/17/25	Project:	Cantera/Time Oil, F&BI 509292
Date Extracted:	09/17/25	Lab ID:	509292-01 1/10
Date Analyzed:	09/18/25	Data File:	091822.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	96	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.9
cis-1,2-Dichloroethene	330
Trichloroethene	170

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera/Time Oil, F&BI 509292
Date Extracted:	09/17/25	Lab ID:	05-2346 mb
Date Analyzed:	09/17/25	Data File:	091709.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	104	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/23/25

Date Received: 09/17/25

Project: Cantera/Time Oil, F&BI 509292

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 509286-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	108	16-176
cis-1,2-Dichloroethene	ug/L (ppb)	10	3.3	106 b	50-150
Trichloroethene	ug/L (ppb)	10	2.1	103 b	43-133

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	105	102	43-149	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	105	103	70-130	2
Trichloroethene	ug/L (ppb)	10	103	100	70-130	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 509292 CLIENT Floyd Snider

INITIALS/ DATE: (NP) 9/17/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive?
 Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ Date: (NP) 9/17
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____

**Fill out Green manifolds billing sheet

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

December 10, 2025

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included are the results from the testing of material submitted on December 3, 2025 from the Cantera-TOC/Time Oil, F&BI 512047 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Floyd Snider Lab Data, Meg McCann
FDS1210R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 3, 2025 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera-TOC/Time Oil, F&BI 512047 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
512047 -01	01MW58R-120325
512047 -02	01MW107-120325
512047 -03	01MW85-120325
512047 -04	01MW53R-120325
512047 -05	Trip Blank-120325

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-120325	Client:	Floyd-Snider
Date Received:	12/03/25	Project:	Cantera-TOC/Time Oil
Date Extracted:	12/05/25	Lab ID:	512047-01 1/10
Date Analyzed:	12/05/25	Data File:	120539.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	49
cis-1,2-Dichloroethene	230
Trichloroethene	410

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW107-120325	Client:	Floyd-Snider
Date Received:	12/03/25	Project:	Cantera-TOC/Time Oil
Date Extracted:	12/05/25	Lab ID:	512047-02
Date Analyzed:	12/05/25	Data File:	120537.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	0.064

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW85-120325	Client:	Floyd-Snider
Date Received:	12/03/25	Project:	Cantera-TOC/Time Oil
Date Extracted:	12/05/25	Lab ID:	512047-03 1/10
Date Analyzed:	12/05/25	Data File:	120540.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	65
cis-1,2-Dichloroethene	1,100
Trichloroethene	4.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW53R-120325	Client:	Floyd-Snider
Date Received:	12/03/25	Project:	Cantera-TOC/Time Oil
Date Extracted:	12/05/25	Lab ID:	512047-04
Date Analyzed:	12/05/25	Data File:	120538.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	6.9
cis-1,2-Dichloroethene	3.3
Trichloroethene	20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank-120325	Client:	Floyd-Snider
Date Received:	12/03/25	Project:	Cantera-TOC/Time Oil
Date Extracted:	12/05/25	Lab ID:	512047-05
Date Analyzed:	12/05/25	Data File:	120528.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera-TOC/Time Oil
Date Extracted:	12/05/25	Lab ID:	05-3048 mb
Date Analyzed:	12/05/25	Data File:	120509.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	71	132
Toluene-d8	100	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/10/25

Date Received: 12/03/25

Project: Cantera-TOC/Time Oil, F&BI 512047

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 512080-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	101	16-176
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Trichloroethene	ug/L (ppb)	10	<0.05	98	43-133

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	10	106	108	43-149	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	101	101	70-130	0
Trichloroethene	ug/L (ppb)	10	103	103	70-130	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

518047

SAMPLE CHAIN OF CUSTODY

12/03/25

1 of 2

Report To Kristin Anderson + Meg McCann

Company Floyd Swider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2098 Email lavalata@floydswider.com

SAMPLERS (signature) [Signature]

PROJECT NAME Contra-TOC / Time 011

REMARKS Select cVOCs: tce, vc, cis-1,2 DCE

INVOICE TO Pioneer

Project specific RIs? - Yes / No

TURNAROUND TIME Standard turnaround RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL Archive samples Other Default

Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select cVOCs 8260D					
01MWSBR-120325	01 A-C	12/3/25	9:45	GW	3								X					
01MW107-120325	02		10:40	GW	3								X					
01MWS85-120325	03		11:25	GW	3								X					
01MWS3R-120325	04		11:55	GW	3								X					
TRIPBLANK-120325	05 A B		13:00	W	2								X					

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by: [Signature]

Meg McCann

Floyd Swider

12/3/25

13:50

Received by: [Signature]

Mh. Plann

FBI

12/3/25

13:50

Relinquished by:

Samples received at 13 °C

Received by:

Friedman & Bryna, Inc.
 5500 4th Ave S.
 Seattle WA 98108
 (206) 285-8282
 office@friedmanandbryna.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 512047 CLIENT Floyd Snider INITIALS/ ^{AP} DATE: 12/3/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature _____ °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive?
 Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ (NP) 12/3
*or other representative documents, letters, and/or shipping memos Date: _____

Number of days samples have been sitting prior to receipt at laboratory 0 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____
**Fill out Green manifolds billing sheet

Long-Term Compliance Monitoring Annual Report Appendix A: 2025 Groundwater Monitoring Annual Report

Time Oil Bulk Terminal

Attachment A.3 Data Validation Summaries

Data Validation Summary

Prepared by: Charlie Lentz

Date: February 9, 2026

Project ID: Cantera-TOC

Sample Event(s): 2025-Q1 Groundwater Monitoring

Sample Delivery Group(s): 503011

Sample Media: Groundwater

A Compliance Screening (USEPA Stage 2A) data quality review was performed on select volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and pentachlorophenol data resulting from laboratory analysis. The data were reviewed using guidance and quality control (QC) criteria documented in the Long-Term Compliance Monitoring Plan (Crete 2023), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020).

A total of 15 groundwater samples and 1 field duplicate were submitted to Friedman & Bruya, Inc. (FBI) in Seattle, Washington, for chemical analysis by USEPA 8260D, USEPA 8270E, NWTPH-Dx and -Gx. FBI reported results under sample delivery group (SDG) 503011.

DATA QUALITY REVIEW

All field and laboratory QC parameters for samples met project criteria.

DATA QUALITY SUMMARY

Based on the data quality review, data are determined to be of acceptable quality for use as reported.

REFERENCES

Crete Consulting, Inc. (Crete). *Long-Term Compliance Monitoring Plan, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 10 February.

U.S. Environmental Protection Agency (USEPA). 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Prepared by the Office of Solid Waste and Emergency Response. EPA-530/SW-846.

_____. 2020. *National Functional Guidelines for Organic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-20-005/OLEM 9240.0-51. November.

Data Validation Summary

Prepared by: Chell Black

Date: February 9, 2026

Project ID: Cantera-TOC

Sample Event(s): 2025-Q2 Groundwater Monitoring

Sample Delivery Group(s): 506097

Sample Media: Groundwater

A Compliance Screening (USEPA Stage 2A) data quality review was performed on select volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPH) data resulting from laboratory analysis. The data were reviewed using guidance and quality control (QC) criteria documented in the Long-Term Compliance Monitoring Plan (Crete 2023), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020).

A total of 5 groundwater samples and 1 field duplicate were submitted to Friedman & Bruya, Inc. (FBI) in Seattle, Washington, for chemical analysis by USEPA 8260D and NWTPH-Dx. FBI reported results under sample delivery group (SDG) 506097.

DATA QUALITY REVIEW

All field and laboratory QC parameters for samples met project criteria.

DATA QUALITY SUMMARY

Based on the data quality review, data are determined to be of acceptable quality for use as reported.

REFERENCES

Crete Consulting, Inc. (Crete). 2023. *Long-Term Compliance Monitoring Plan, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 10 February.

U.S. Environmental Protection Agency (USEPA). 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Prepared by the Office of Solid Waste and Emergency Response. EPA-530/SW-846.

_____. 2020. *National Functional Guidelines for Organic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-20-005/OLEM 9240.0-51. November.

Data Validation Summary

Prepared by: Henry Bates

Date: February 9, 2026

Project ID: Cantera-TOC

Sample Event(s): 2025-Q3 Groundwater Monitoring

Sample Delivery Group(s): 509293

Sample Media: Groundwater

A Compliance Screening (USEPA Stage 2A) data quality review was performed on total arsenic, select volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPH) data resulting from laboratory analysis. The data were reviewed using guidance and quality control (QC) criteria documented in the Long-Term Compliance Monitoring Plan (Crete 2023), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020a), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA 2020b).

A total of 17 groundwater samples and 1 field duplicate were submitted to Friedman & Bruya, Inc. (FBI) in Seattle, Washington, for chemical analysis by USEPA 6020B, USEPA 8260D, NWTPH-Gx, and NWTPH-Dx. FBI reported results under sample delivery group (SDG) 509293.

DATA QUALITY REVIEW

Field and laboratory QC parameters for all samples met project criteria.

DATA QUALITY SUMMARY

Based on the data quality review, data are determined to be of acceptable quality for use as reported or qualified.

REFERENCES

Crete Consulting, Inc. (Crete). 2023. *Long-Term Compliance Monitoring Plan, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 10 February.

U.S. Environmental Protection Agency (USEPA). 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Prepared by the Office of Solid Waste and Emergency Response. EPA-530/SW-846.

- _____. 2020a. *National Functional Guidelines for Organic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-20-005/OLEM 9240.0-51. November.
- _____. 2020b. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-542-R-20-006/OLEM 9240.1-66. November.

Data Validation Summary

Prepared by: Henry Bates

Date: February 9, 2026

Project ID: Cantera-TOC

Sample Event(s): 2025-Q4 Groundwater Monitoring

Sample Delivery Group(s): 512047

Sample Media: Groundwater

A Compliance Screening (USEPA Stage 2A) data quality review was performed on select volatile organic compounds (VOCs) data resulting from laboratory analysis. The data were reviewed using guidance and quality control (QC) criteria documented in the Long-Term Compliance Monitoring Plan (Crete 2023), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), and the National Functional Guidelines for Organic Superfund Methods Data Review (USEPA 2020a).

A total of 4 groundwater samples and 1 trip blank were submitted to Friedman & Bruya, Inc. (FBI) in Seattle, Washington, for chemical analysis by USEPA 8260D. FBI reported results under sample delivery group (SDG) 512047.

DATA QUALITY REVIEW

Field and laboratory QC parameters for all samples met project criteria.

DATA QUALITY SUMMARY

Based on the data quality review, data are determined to be of acceptable quality for use as reported or qualified.

REFERENCES

Crete Consulting, Inc. (Crete). 2023. *Long-Term Compliance Monitoring Plan, Time Oil Bulk Terminal, Seattle, Washington*. Prepared for TOC Seattle Terminal 1, LLC. 10 February.

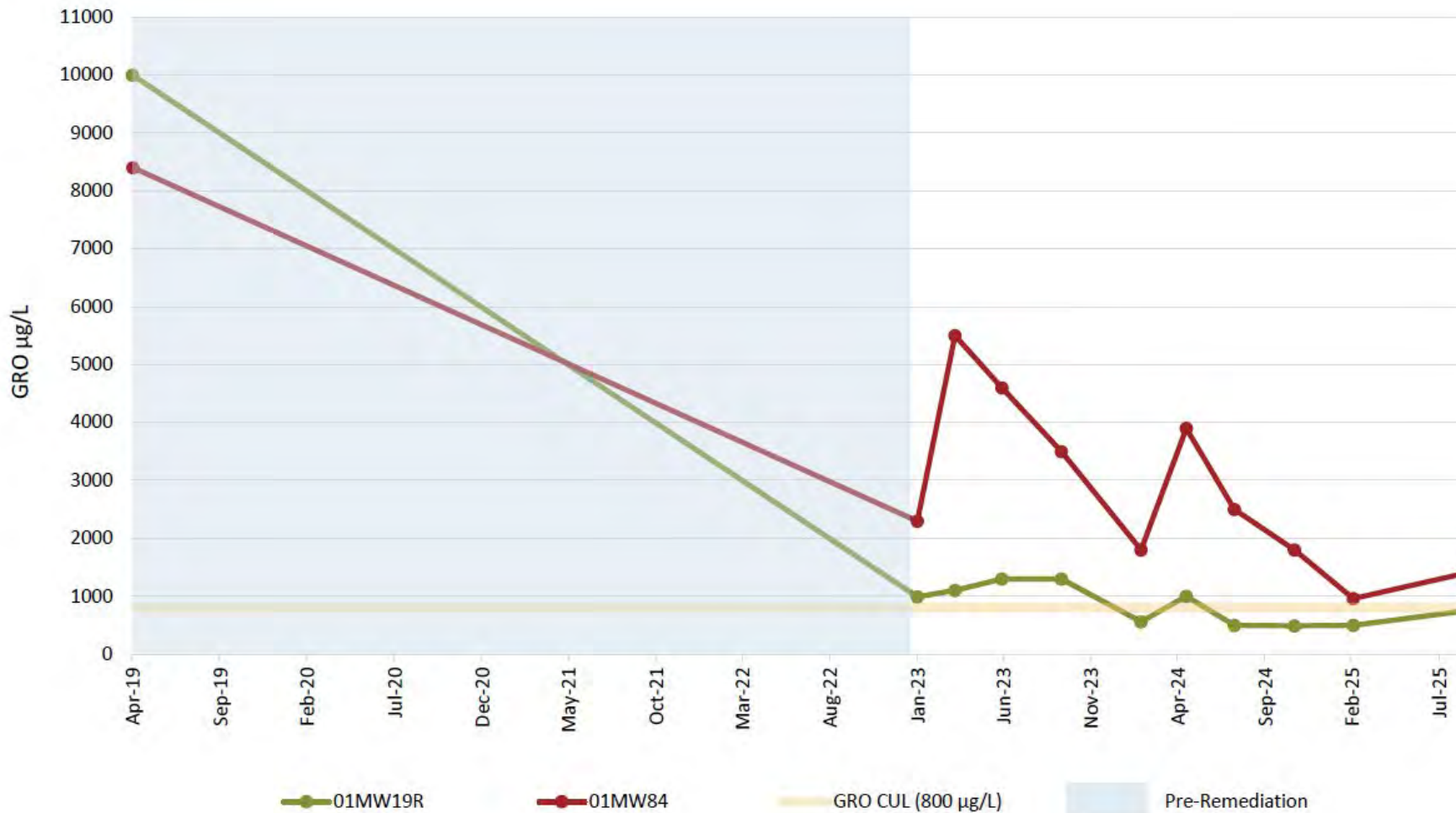
U.S. Environmental Protection Agency (USEPA). 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Prepared by the Office of Solid Waste and Emergency Response. EPA-530/SW-846.

_____. 2020a. *National Functional Guidelines for Organic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-20-005/OLEM 9240.0-51. November.

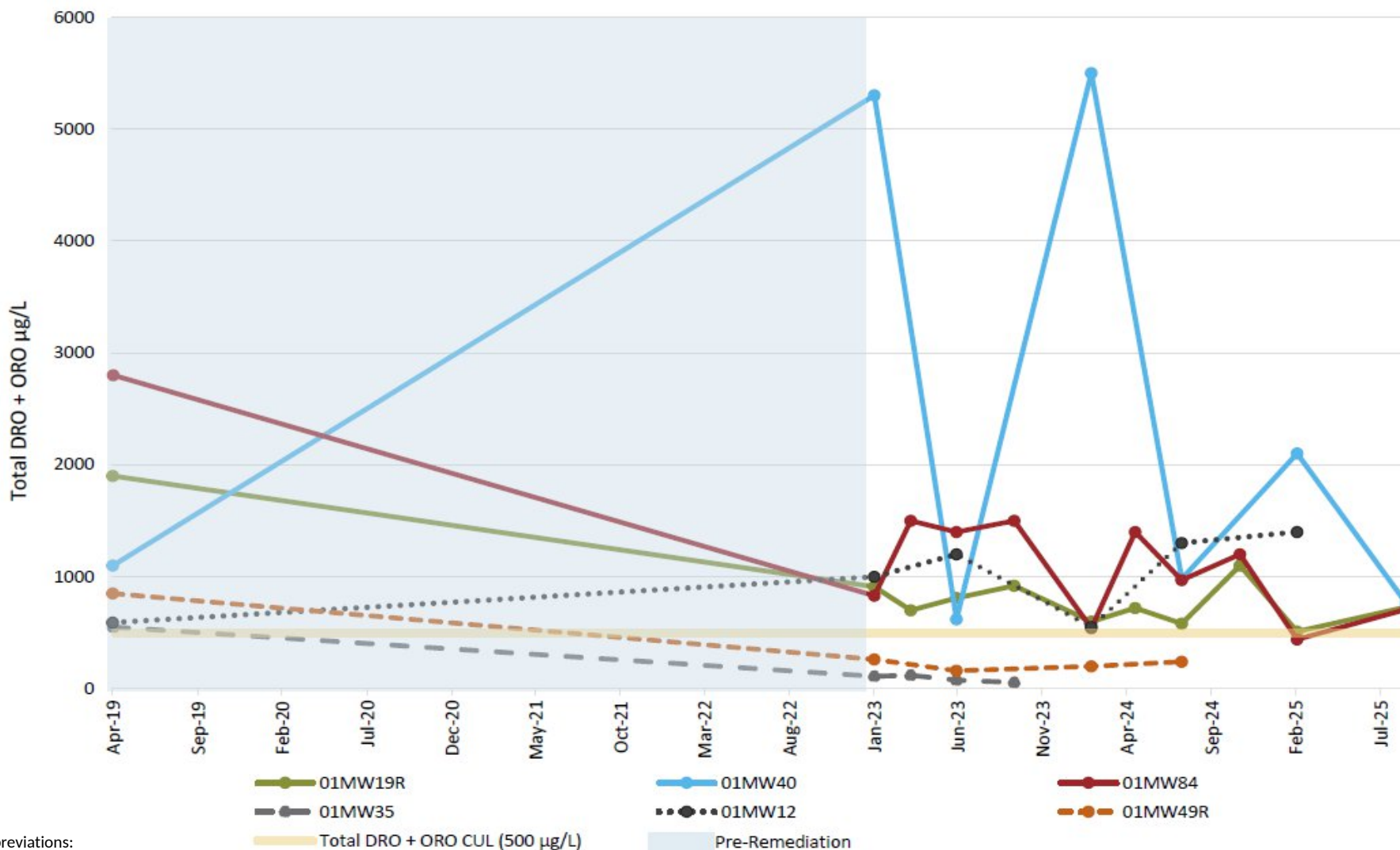
Long-Term Compliance Monitoring Annual Report Appendix A: 2025 Groundwater Monitoring Annual Report

Time Oil Bulk Terminal

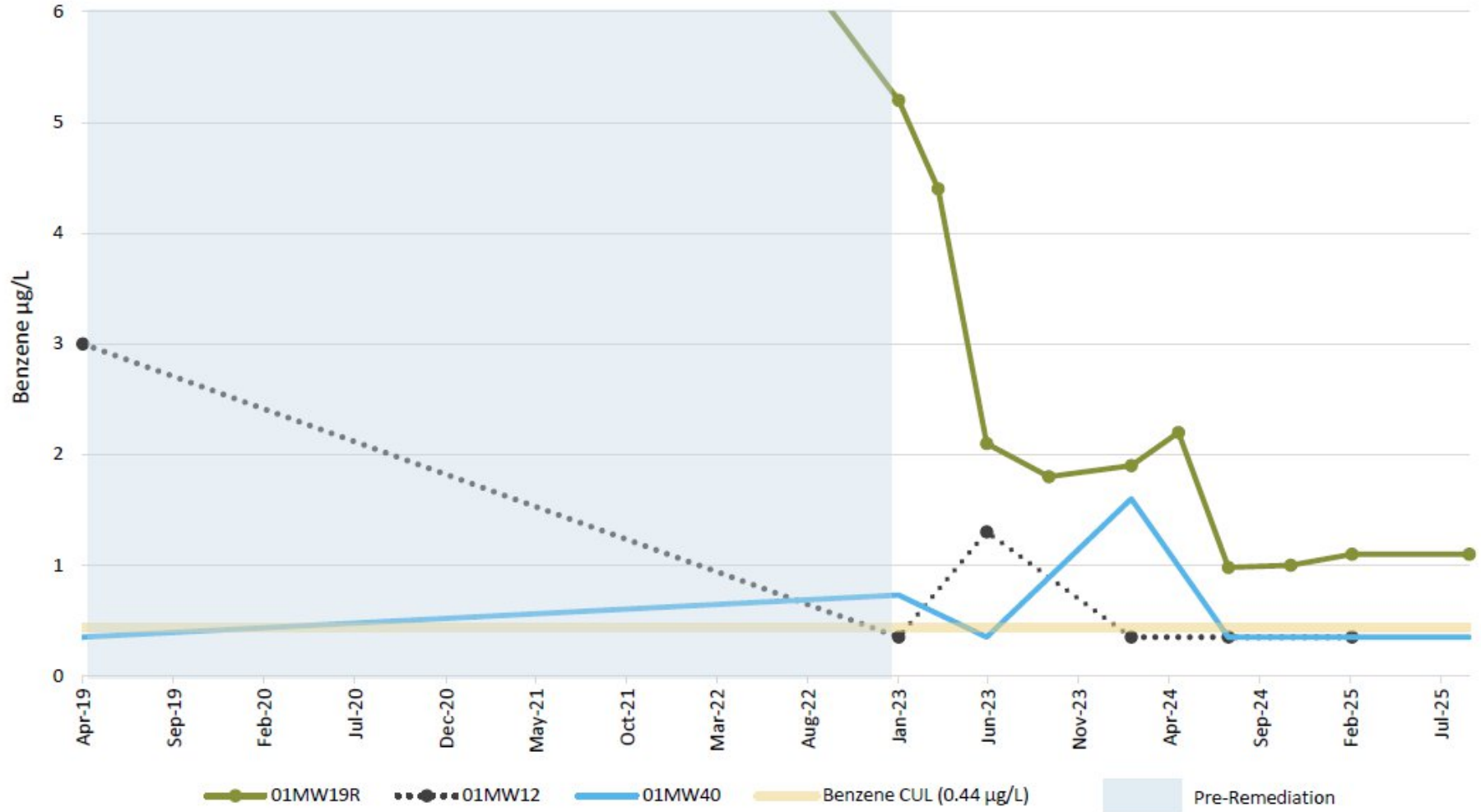
Attachment A.4 Time Concentration and Molar Analysis Plots



Abbreviations:
 CUL = Cleanup level
 GRO = Gasoline-range organics
 µg/L = Micrograms per liter

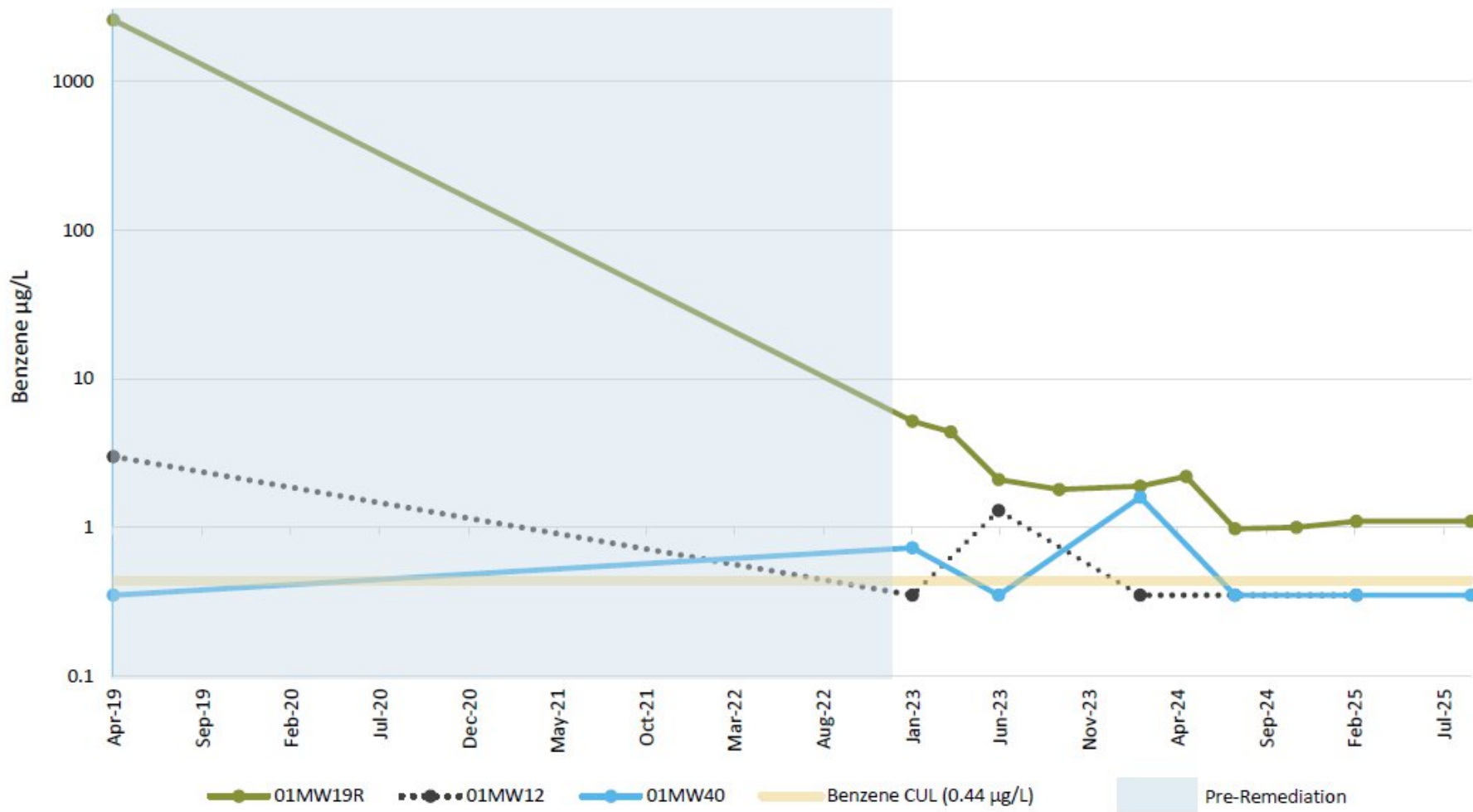


Abbreviations:
 CUL = Cleanup level
 DRO = Diesel-range organics
 ORO = Oil-range organics
 µg/L = Micrograms per liter

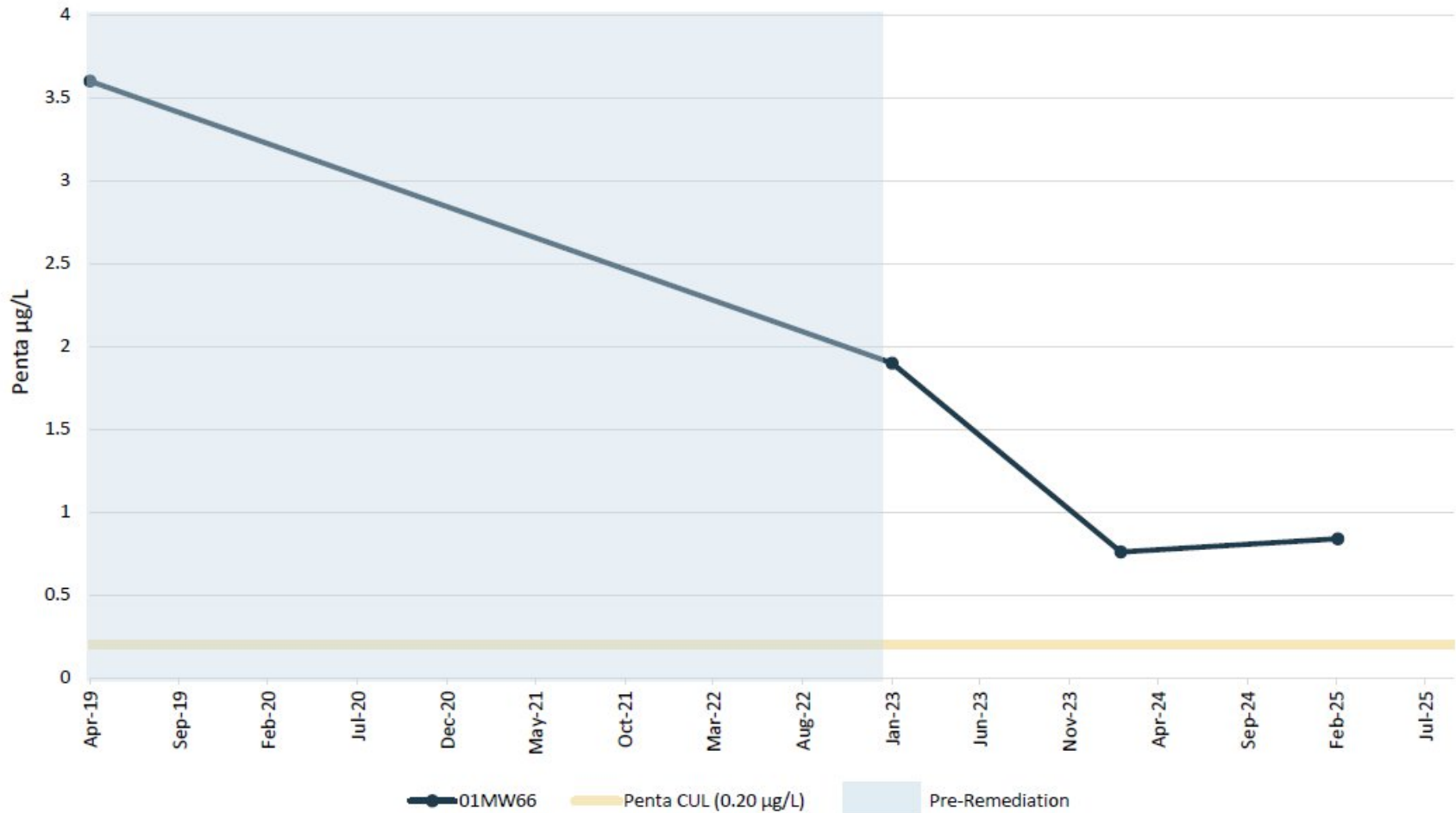


Abbreviations:
 CUL = Cleanup level
 µg/L = Micrograms per liter

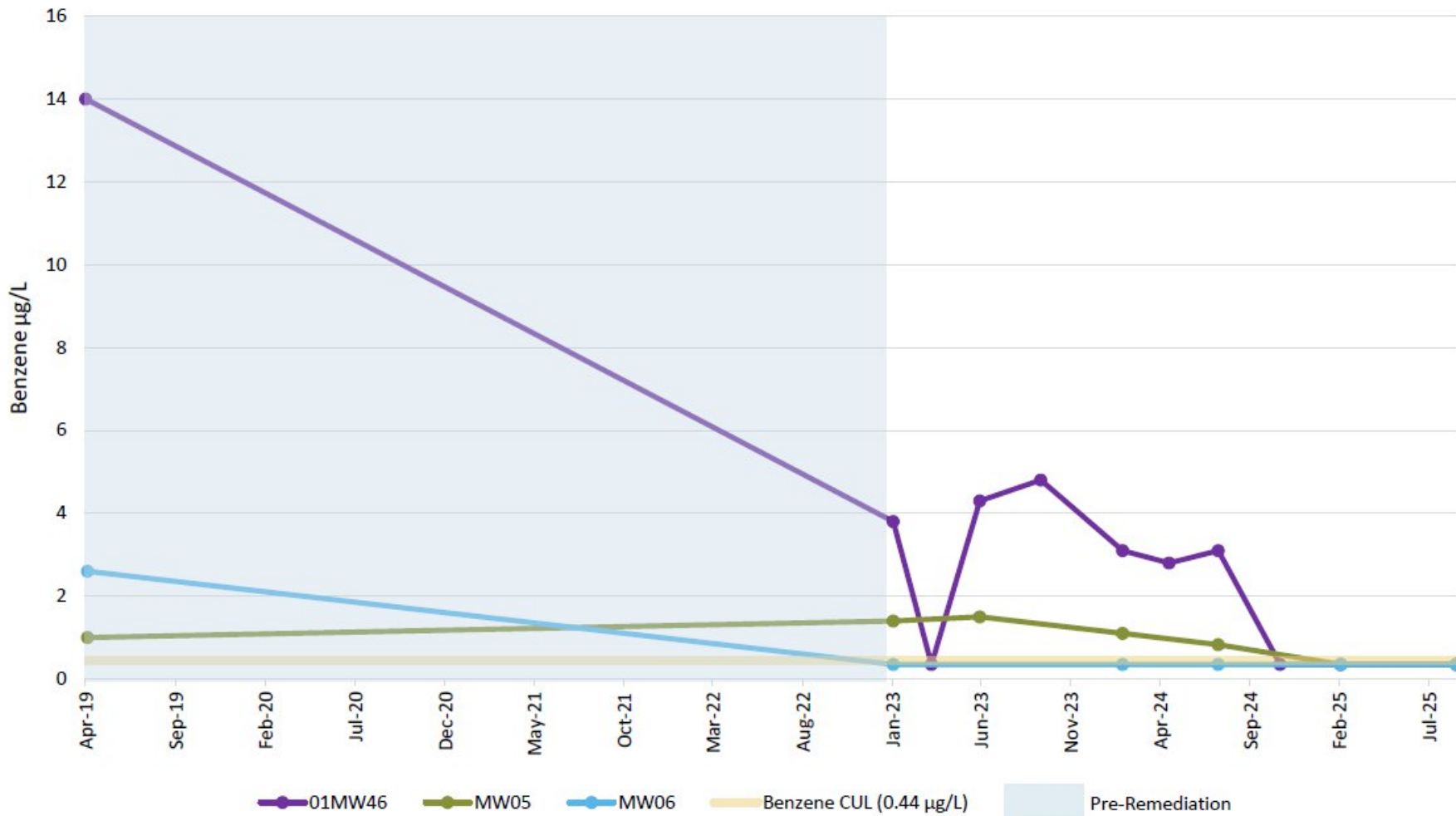
Notes:
 A pre-remediation (April 2023) benzene concentration of 2,600 µg/L at 01MW19R is not shown in the plot.



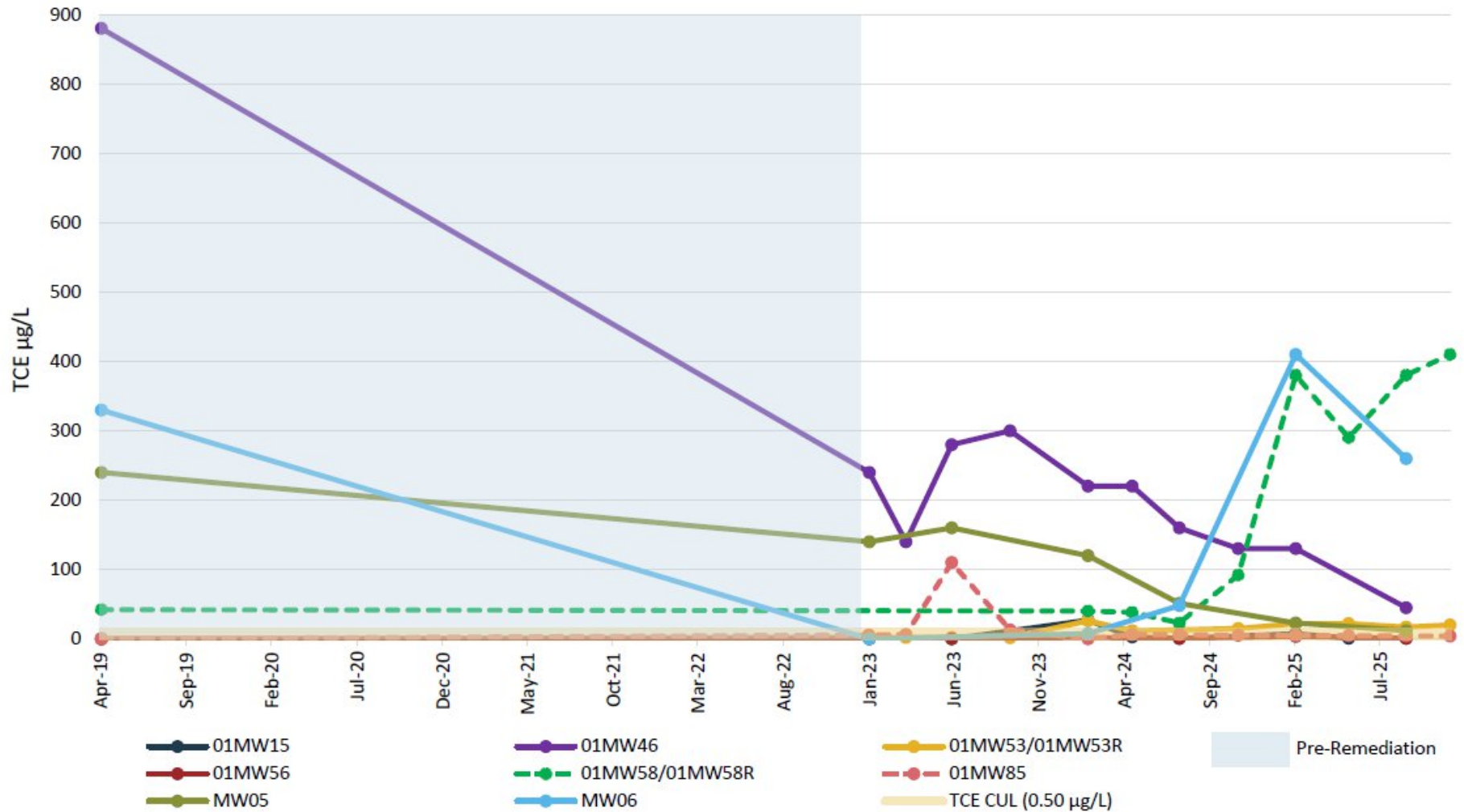
Abbreviations:
 CUL = Cleanup level
 µg/L = Micrograms per liter



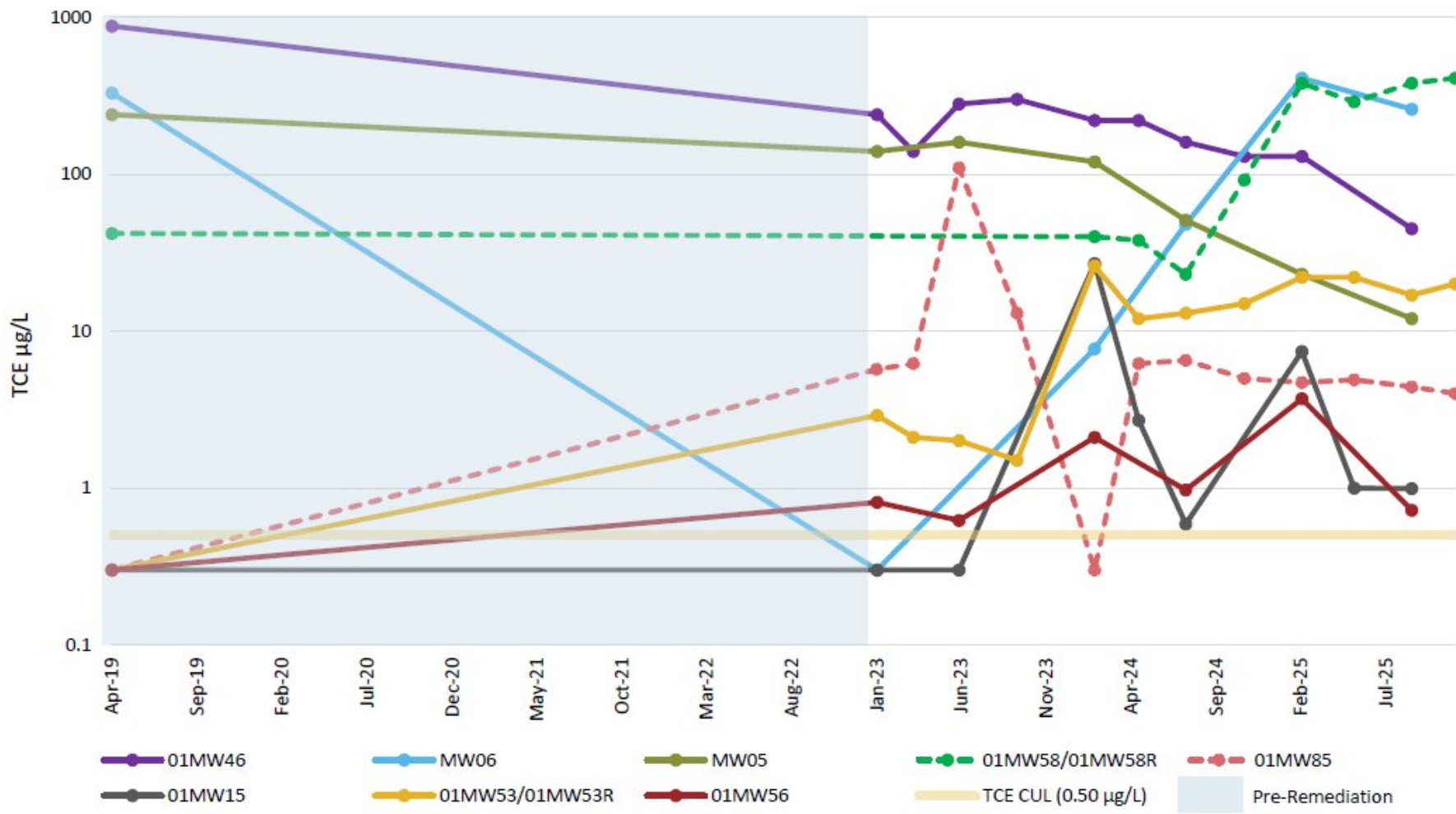
Abbreviations:
 CUL = Cleanup level
 Penta = Pentachlorophenol
 µg/L = Micrograms per liter



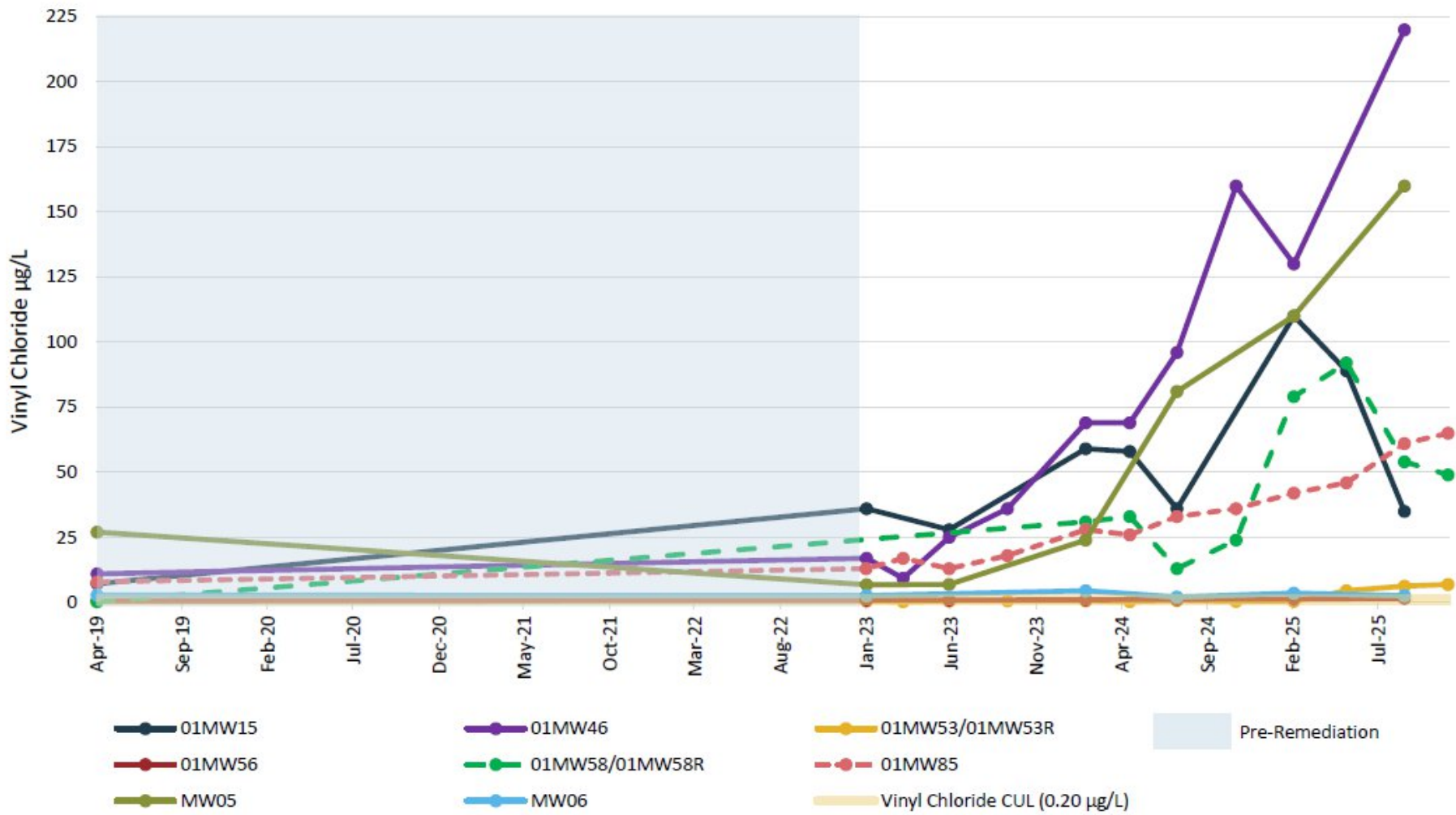
Abbreviations:
 CUL = Cleanup level
 µg/L = Micrograms per liter



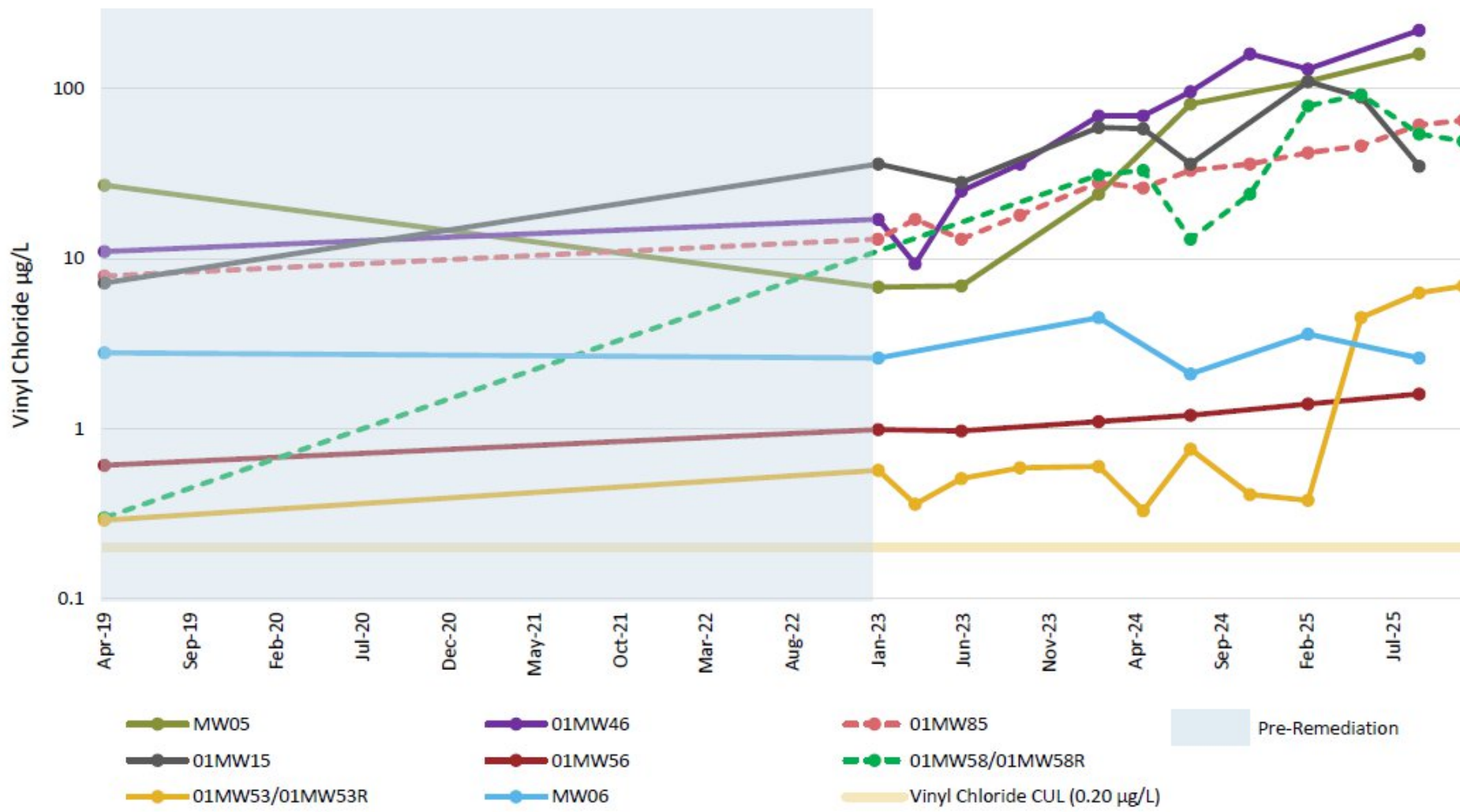
CUL = Cleanup level
TCE = Trichloroethene
µg/L = Micrograms per liter



Abbreviations:
 CUL = Cleanup level
 TCE = Trichloroethylene
 µg/L = Micrograms per liter

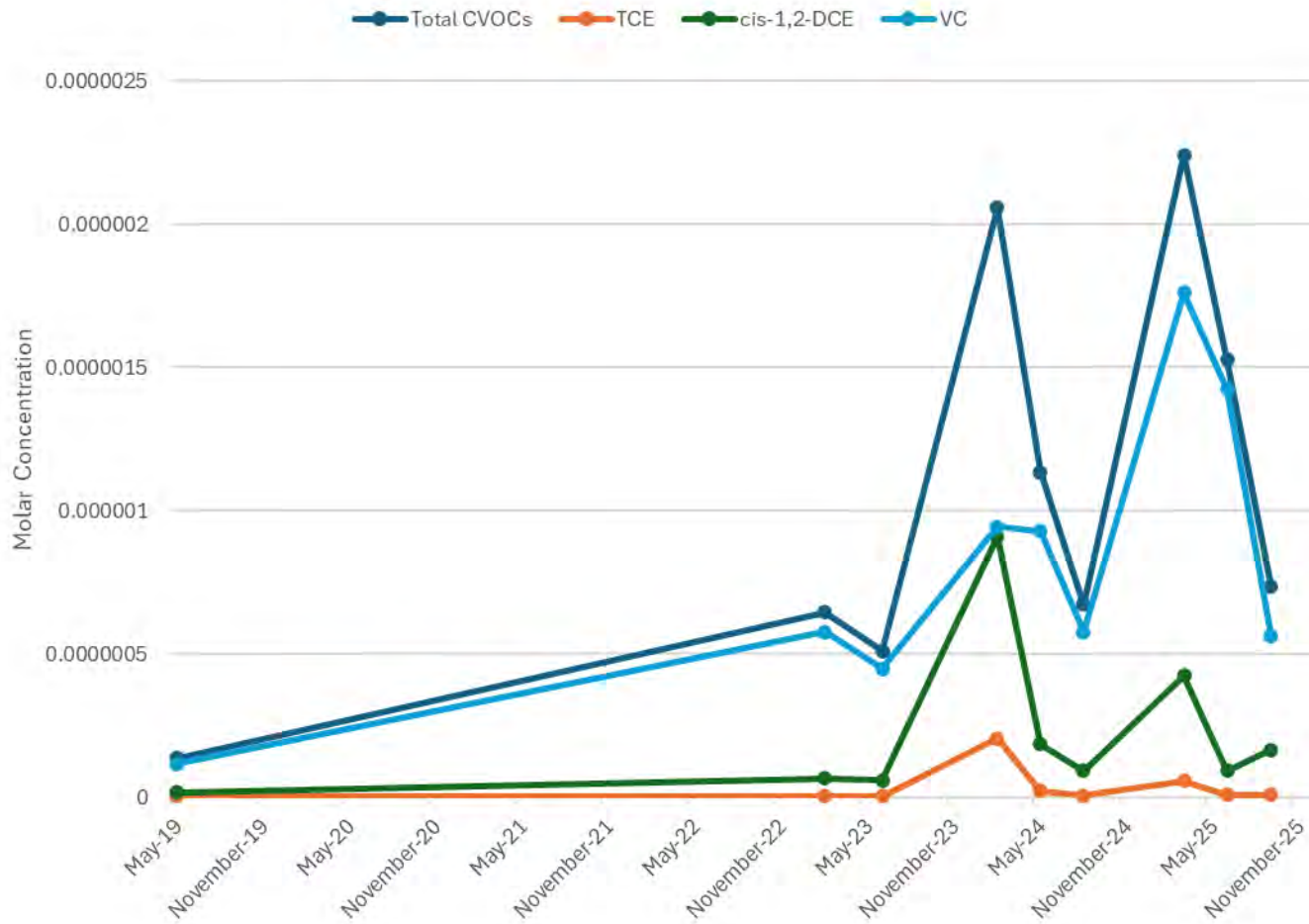


Abbreviations:
 CUL = Cleanup level
 µg/L = Micrograms per liter



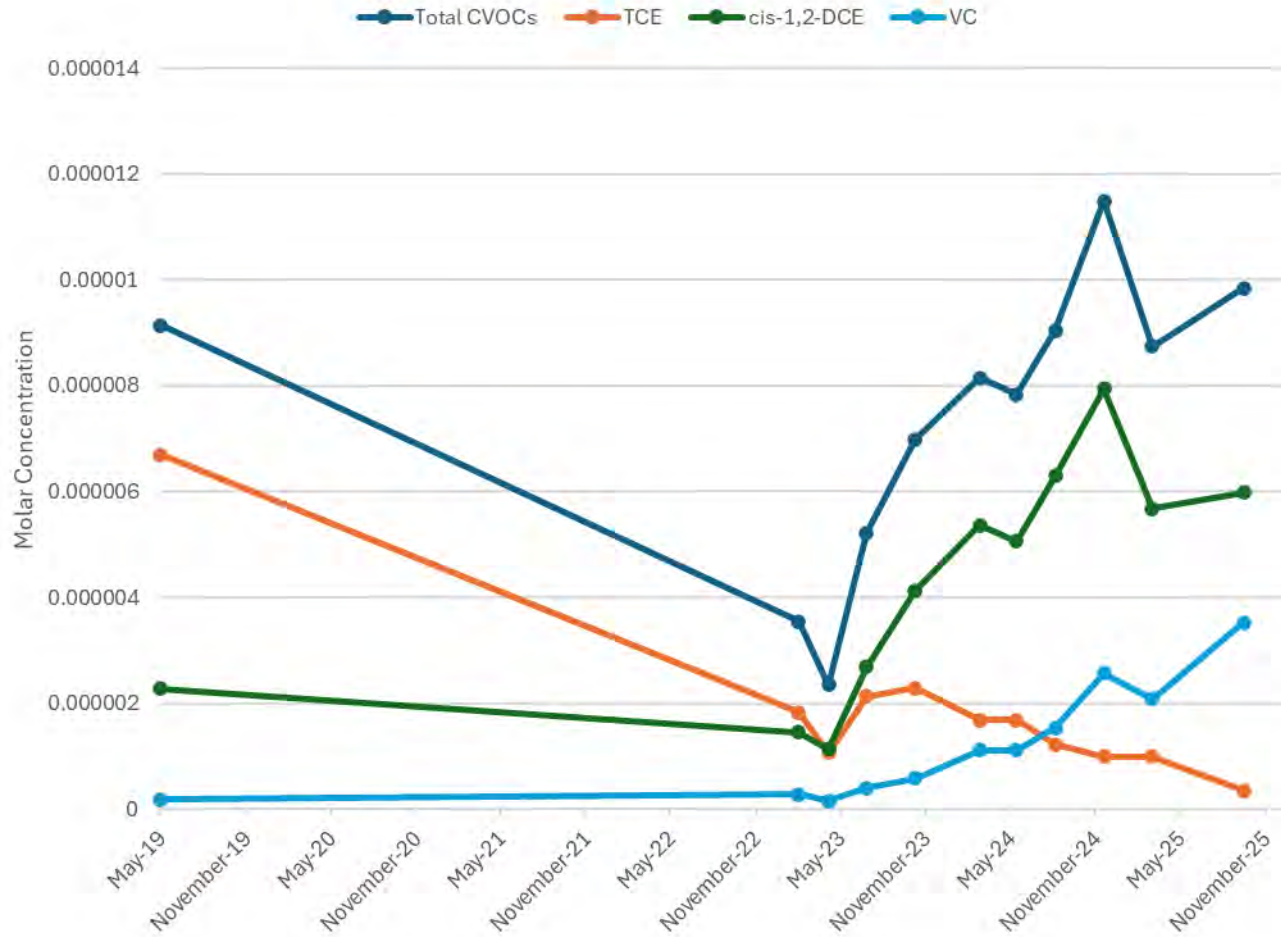
Abbreviations:
 CUL = Cleanup level
 µg/L = Micrograms per liter

01MW15



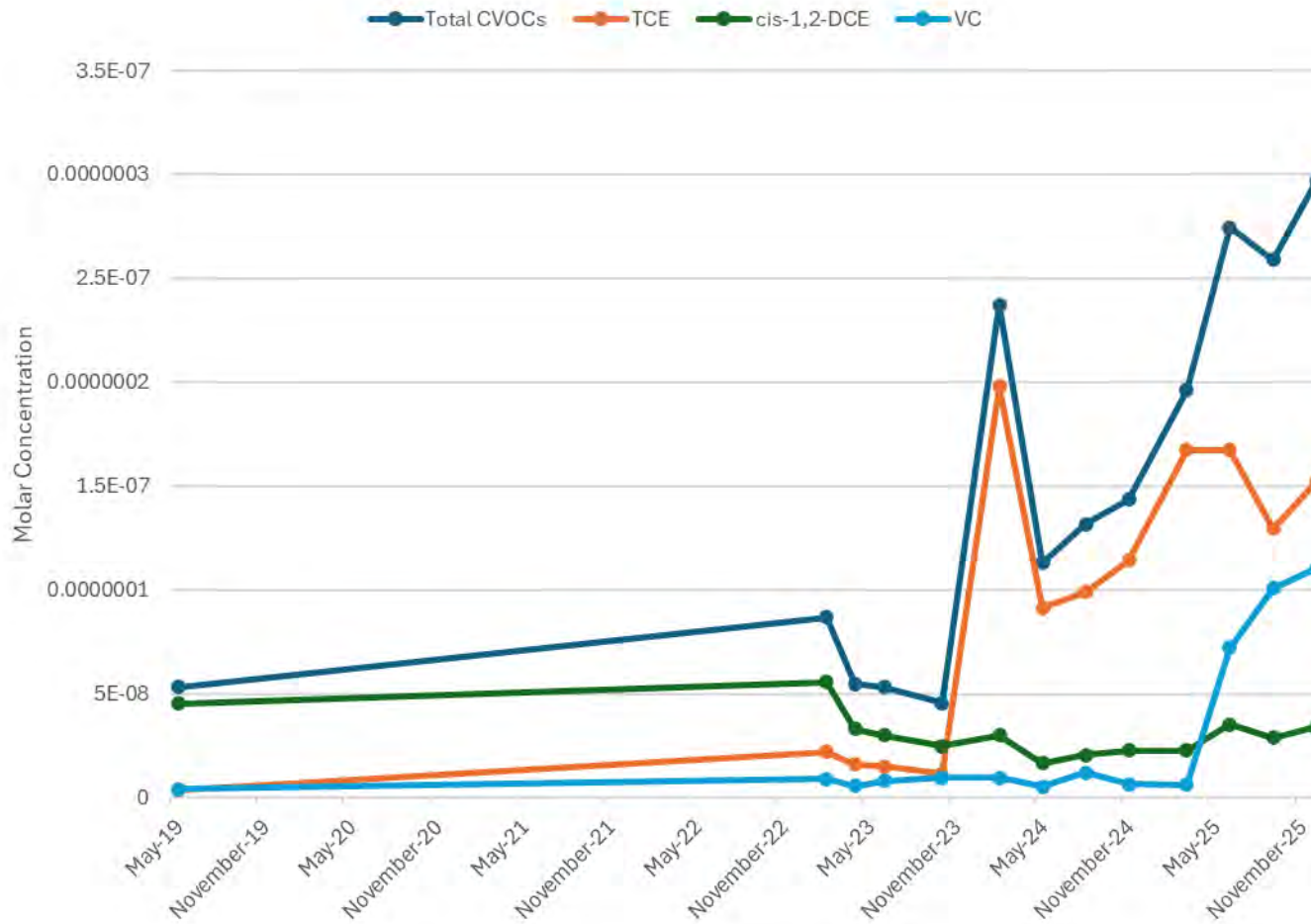
Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

01MW46



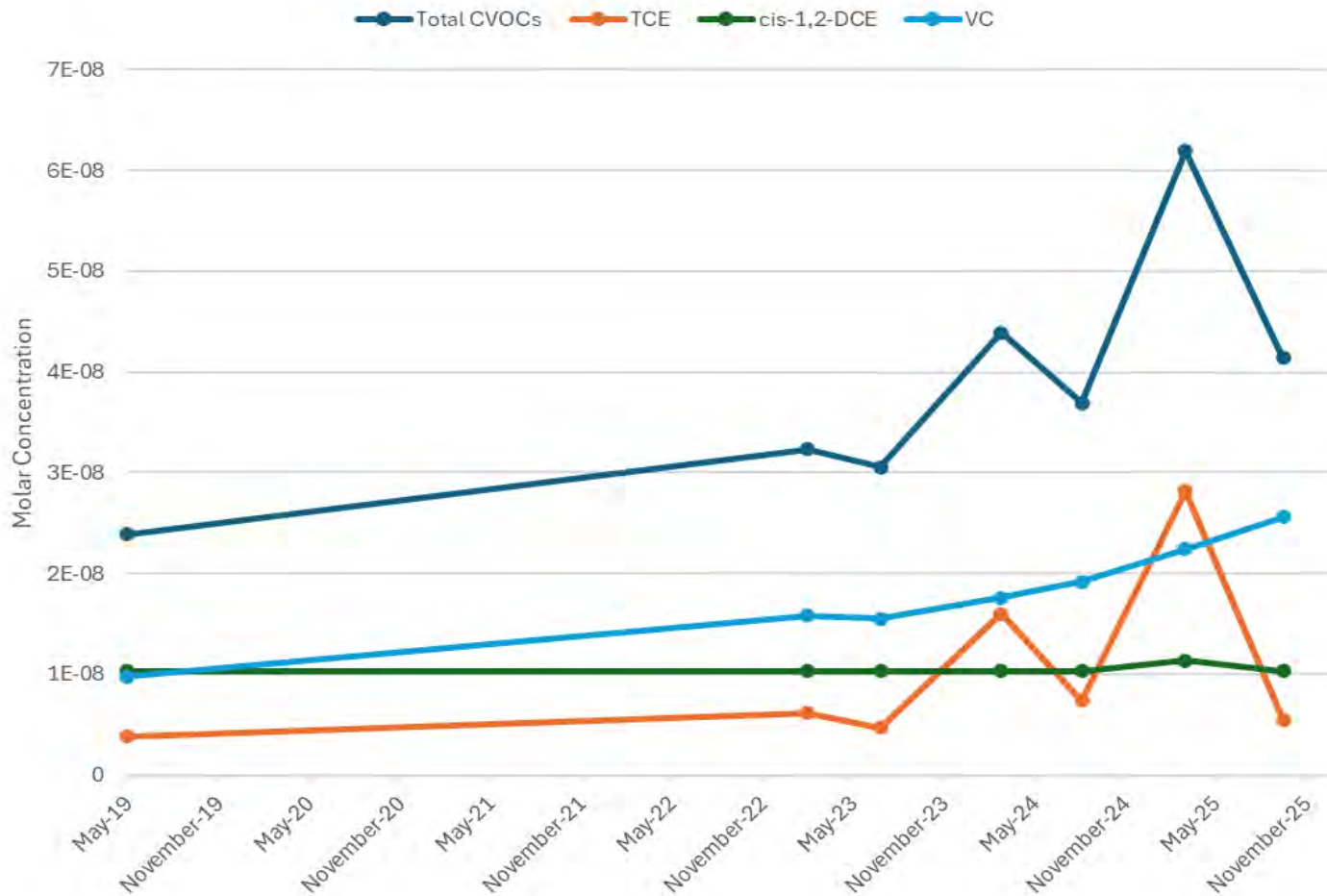
Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

01MW53/R

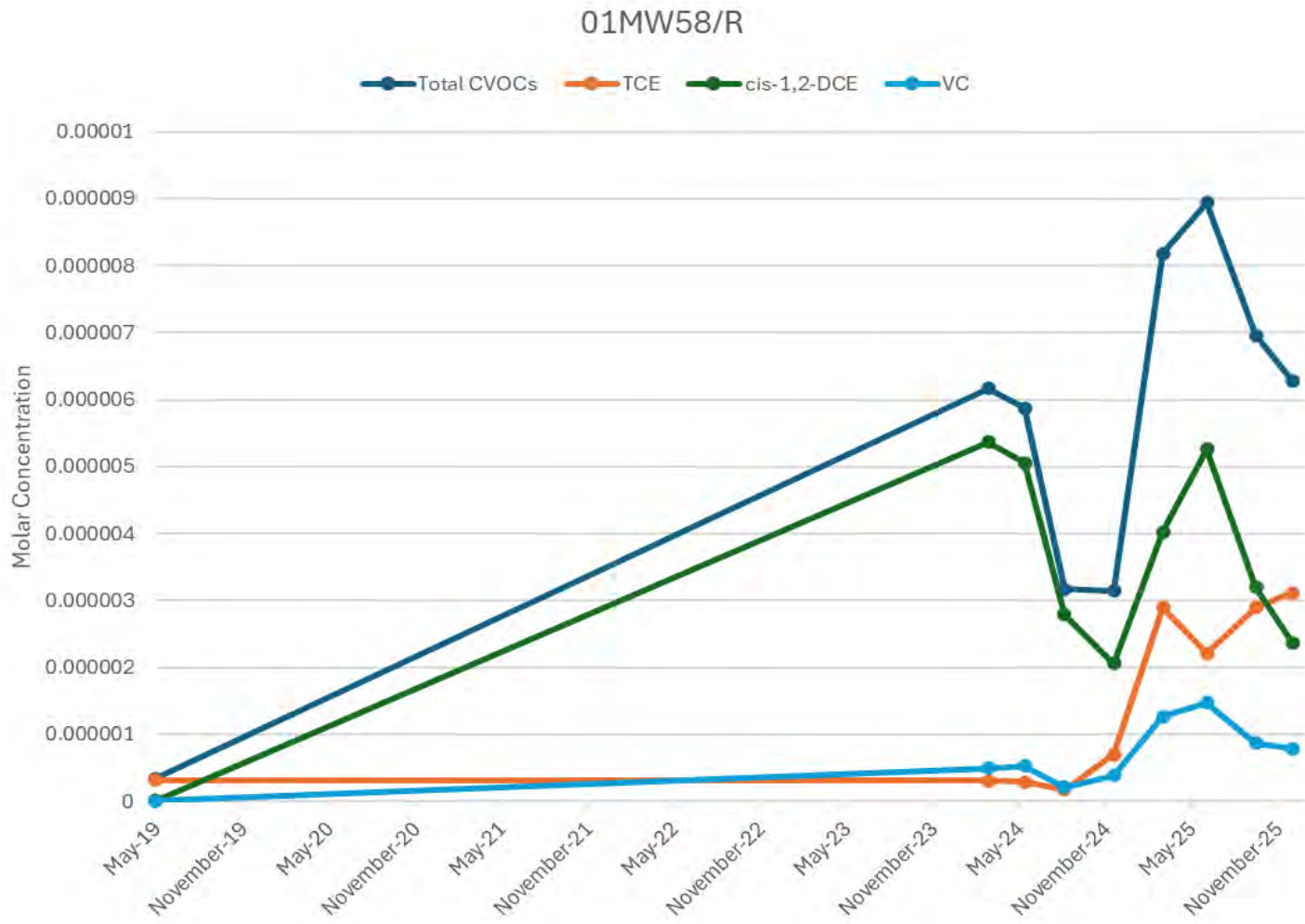


Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

01MW56

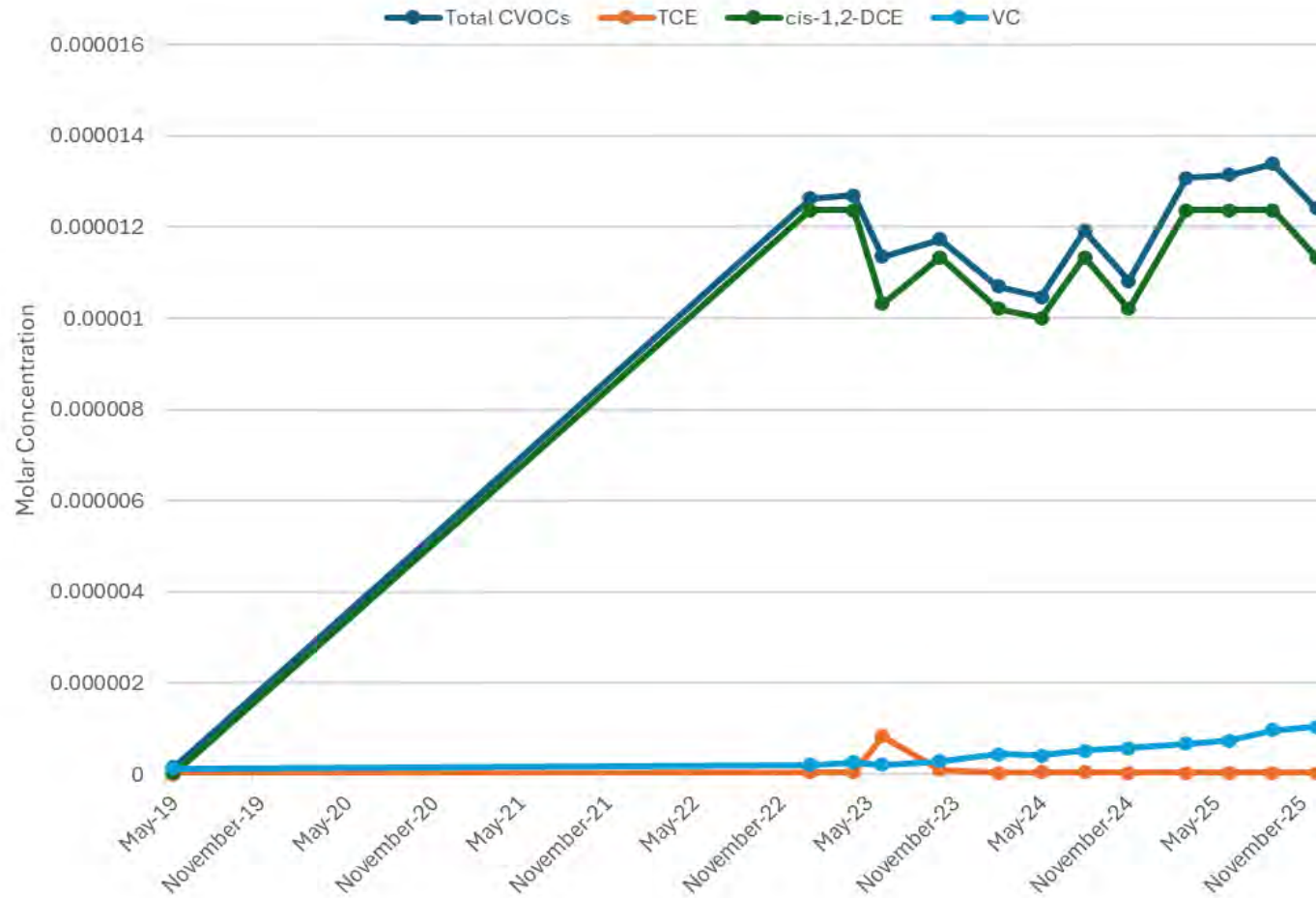


Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

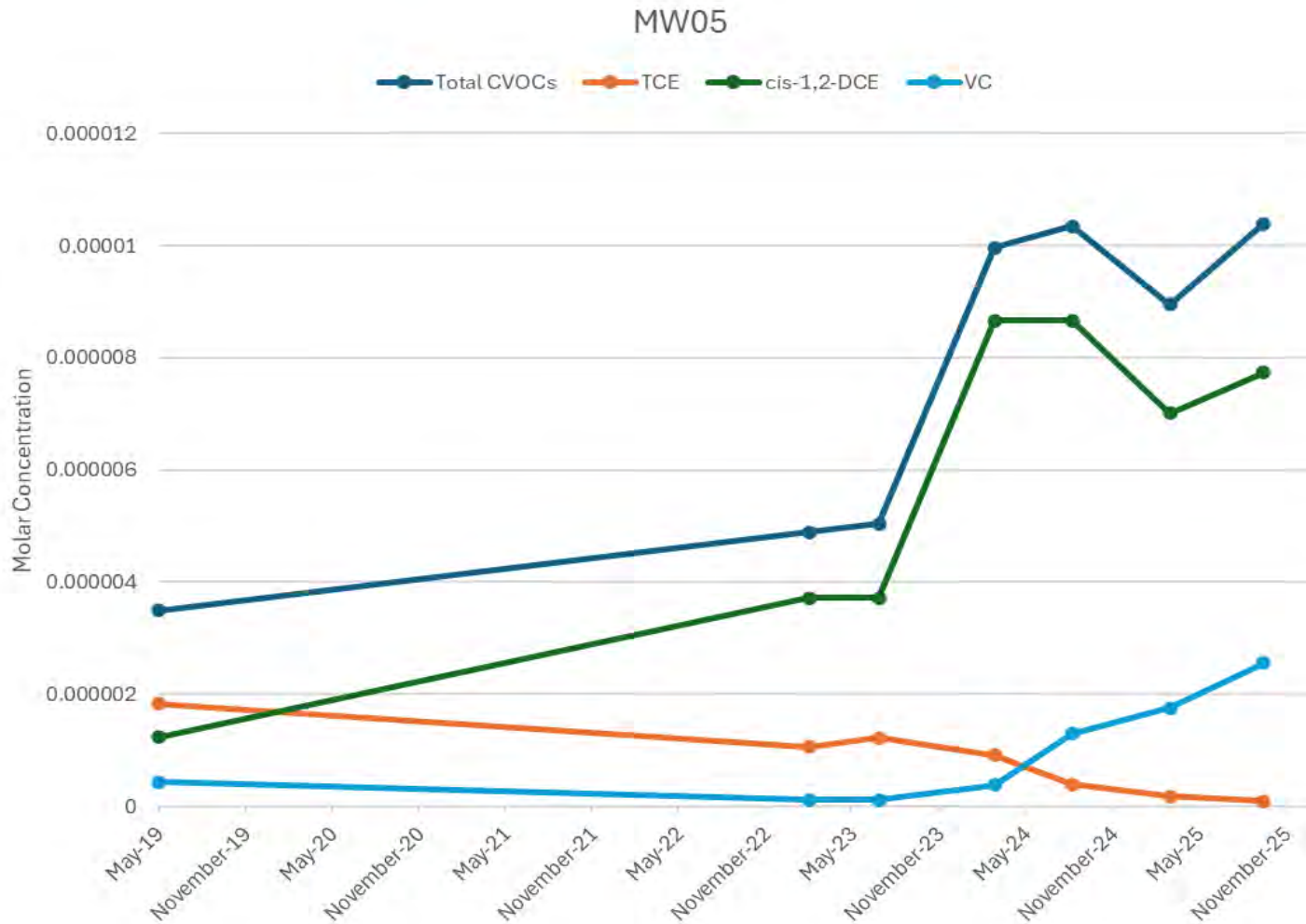


Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

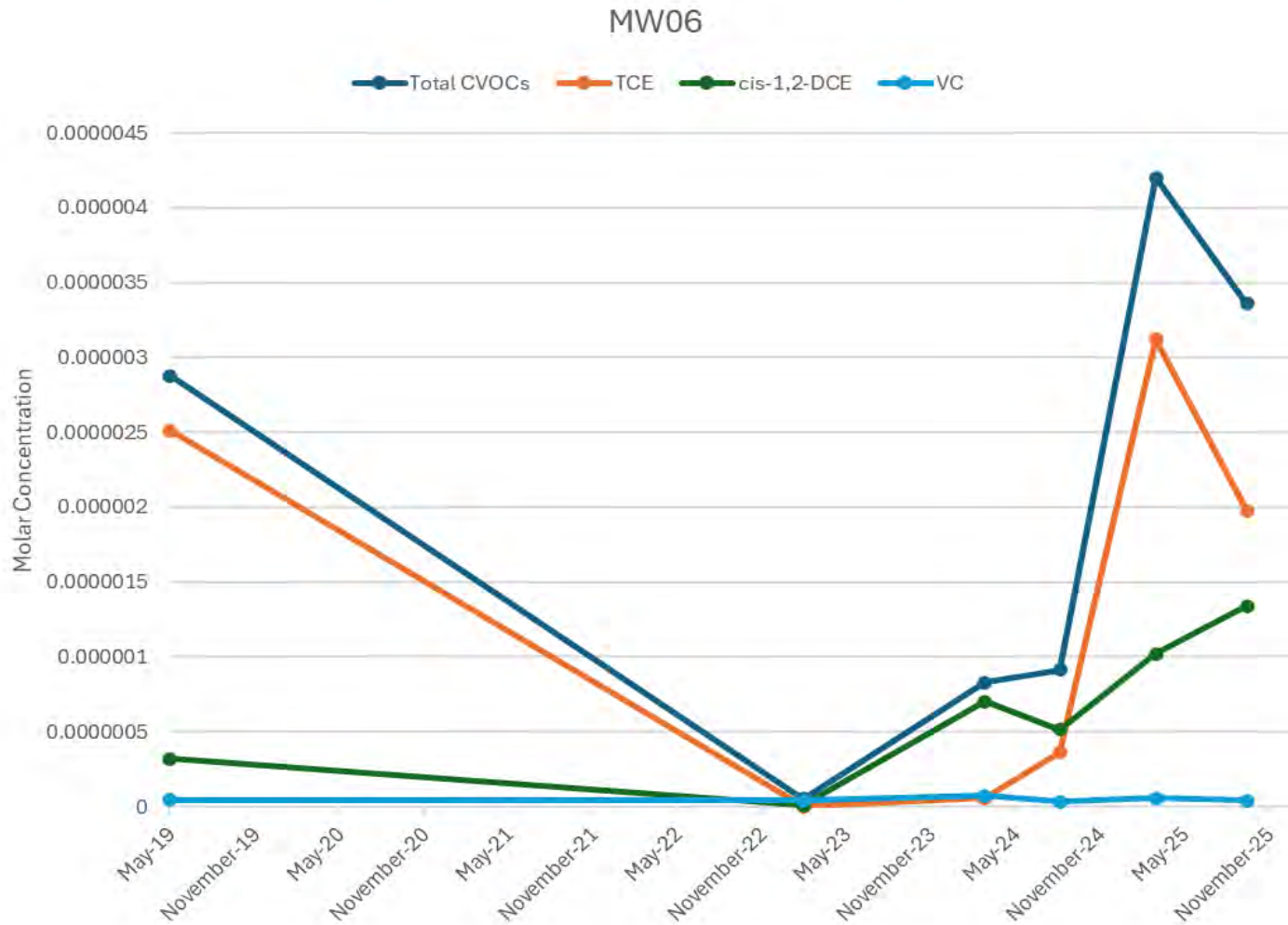
01MW85



Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

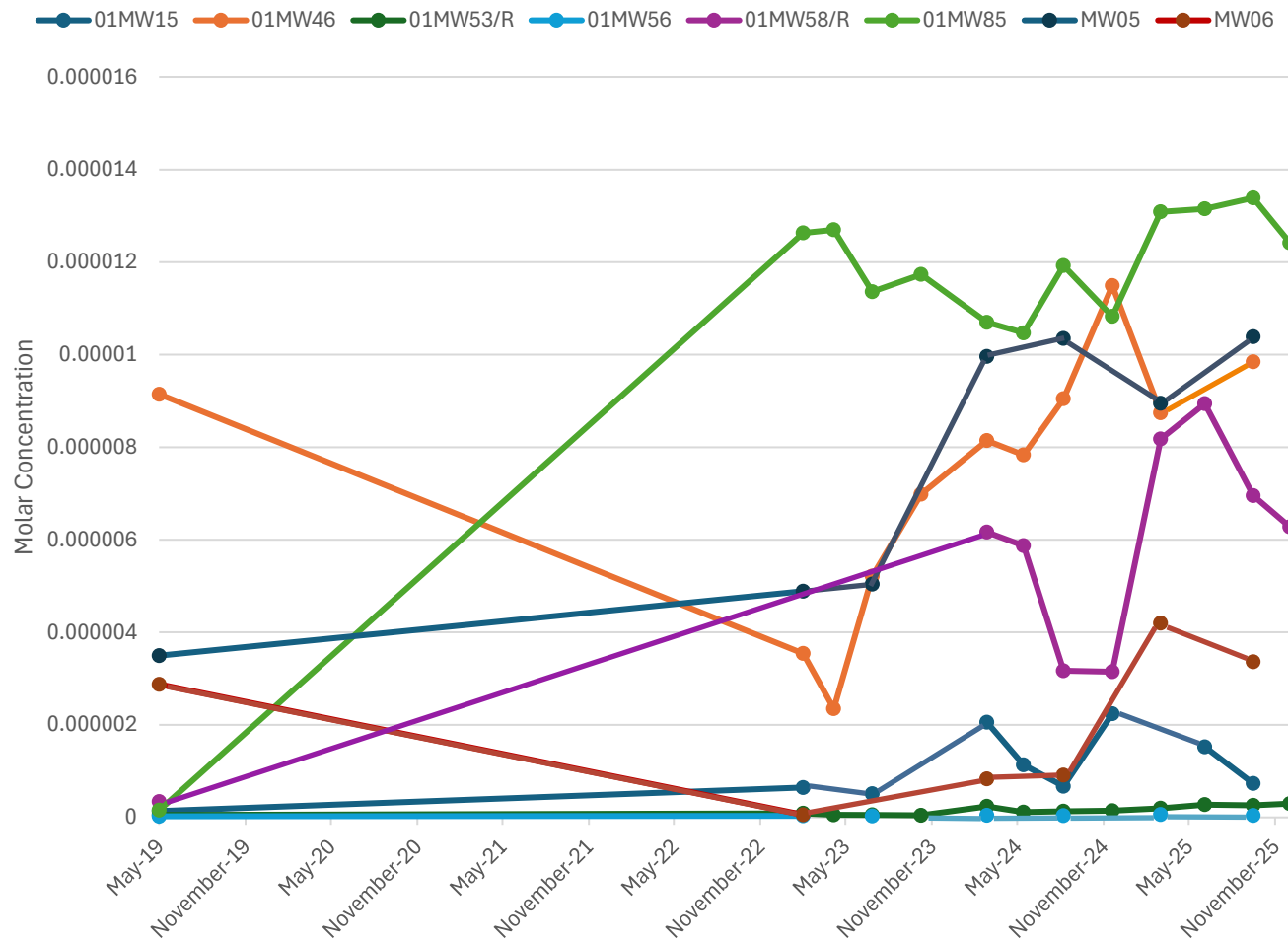


Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride



Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

Total CVOCs- all Wells



Abbreviations:
 CVOC = Chlorinated volatile organic compound
 DCE = cis-1,2-Dichloroethene
 TCE = Trichloroethene
 VC = Vinyl chloride

Long-Term Compliance Monitoring Annual Report Appendix A: 2025 Groundwater Monitoring Annual Report

Time Oil Bulk Terminal

Attachment A.5 Updated Monitoring Well Sampling and Analytical Schedule

**Attachment A.5
Updated Monitoring Well Sampling and Analytical Schedule**

Well ID	Water-Bearing Zone	Screened Interval (feet bTOC)	Proposed Monitoring Frequency ⁽¹⁾	Notes	Proposed Monitoring Parameters						Monitoring Schedule				Change Log ⁽⁴⁾
					Indicator Hazardous Substances					MNA Parameters ⁽³⁾	2026				
					Total Arsenic by USEPA 6020B	GRO by NWTPH-Gx	Total DRO+ORO by NWTPH-Dx	Benzene by USEPA 8260D	CVOCs ⁽²⁾ by USEPA 8260D		Penta by USEPA 8270D SIM	Field Parameters	Q1	Q2	
Bulk Terminal Parcel Wells															
Wells Designated for Analytical Sampling															
01MW19R	Shallow	10–20	Quarterly (2023–2024)/ Semiannual (2025–2026)			X	X	X			X	IHS		IHS	
01MW40	Shallow	7–22	Semiannual			X	X	X			X	IHS		IHS	Discontinue benzene if less than CUL after Q1.
01MW66	Shallow	12–22	Annual	On-property penta plume.						X	X	IHS			
01MW84	Shallow	17–23	Quarterly (2023–2024)/ Semiannual (2025–2026)			X	X	X			X	IHS		IHS	
01MW87	Shallow	11–21	Annual	Annual monitoring added to replace monitoring at 01MW12 which was damaged and decommissioned in 2025		X	X	X			X	IHS			To be sampled Q1 2026 in coordination with Ecology.
01MW90R	Shallow	new (~5–15)	Semiannual	Install and monitor in place of 01MW40 after redevelopment grading.		X	X	X			X				To be installed following redevelopment.
Wells Designated for Contingency or Water Level Monitoring Only															
01MW35	Shallow	10–20	--	Short-term monitoring complete in 2023.		X	X	X			X				
01MW100	Shallow	20–30	--	Retain for collection of additional performance data if needed.											Upgradient sentinel monitoring location retained in place of 01MW17.
01MW102	Shallow	10–20	--	Retain for collection of additional performance data if needed.											
ASKO Parcel Wells															
Wells Designated for Analytical Sampling															
MW05	Shallow	19–29	Semiannual					X	X		X (Dissolved Gases)	IHS		HIS	Ecology requested to continue monitoring semiannually while CVOCs are elevated at the CPOC. MNA parameters will include dissolved gases in Q3.
MW06	Shallow	18–28	Initial Baseline/Contingency	Contingency sample if increasing IHSs at 01MW53, 01MW85 or MW05.				X	X		X	IHS		IHS	
01MW15	Shallow	10–30	Semiannual						X		X	IHS		IHS	

**Attachment A.5
Updated Monitoring Well Sampling and Analytical Schedule**

Well ID	Water-Bearing Zone	Screened Interval (feet bTOC)	Proposed Monitoring Frequency ⁽¹⁾	Notes	Proposed Monitoring Parameters						Monitoring Schedule				Change Log ⁽⁴⁾
					Indicator Hazardous Substances					MNA Parameters ⁽³⁾	2026				
					Total Arsenic by USEPA 6020B	GRO by NWTPH-Gx	Total DRO+ORO by NWTPH-Dx	Benzene by USEPA 8260D	CVOCs ⁽²⁾ by USEPA 8260D		Penta by USEPA 8270D SIM	Field Parameters	Q1	Q2	
ASKO Parcel Wells (cont.)															
Wells Designated for Analytical Sampling (cont.)															
01MW46	Shallow	13–28	Quarterly (2023–2025)/ Semiannual (2026)				X	X			X (Dissolved Gases)	IHS		IHS	MNA parameters will include dissolved gases in Q3.
01MW53R	Shallow	17–27	Quarterly (2023–2025)/ Semiannual (2026)	Reinstalled during Q1 2024 and continue monitoring. Previous well was screened 16-26.					X		X	IHS		IHS	Sampling frequency reduced to semiannually in 2026.
01MW56	Shallow	16–26	Semiannual					X			X	IHS		IHS	
01MW58R	Shallow	24–34	Quarterly (2024–2025)/ Semiannual (2026)	Installed and initiated monitoring in Q1 2024.					X		X	IHS		IHS	Sampling frequency reduced to semiannually in 2026. Removed DRO+ORO analysis in coordination with Ecology.
01MW85	Shallow	18–27	Quarterly (2023–2025)/ Semiannual (2026)					X			X	IHS		IHS	Sampling frequency reduced to semiannually in 2026.
Wells Designated for Contingency or Water Level Monitoring Only															
01MW80	Shallow	20–28	Contingency	Monitor if increasing IHSs at 01MW53, 01MW85 or MW05.				X	X		X				
01MW89	Shallow	18–26	Contingency	Sample if increasing IHSs at 01MW53 or 01MW56.					X		X				Contingency monitoring will be reassessed quarterly.
01MW106	Shallow	15–25	Contingency	Retain for collection of water levels or monitor if increasing IHSs at MW06.					X		X	IHS		IHS	Retain as contingency location in place of MW02. Contingency sampling requested by Ecology in 2026.
01MW107	Shallow	17–27	Contingency	Monitor if increasing IHSs at 01MW53 or 01MW85.					X		X	IHS		IHS	Contingency sampling triggered in Q3 2023. Sampling frequency reduced to semiannually in 2026.

**Attachment A.5
Updated Monitoring Well Sampling and Analytical Schedule**

Well ID	Water-Bearing Zone	Screened Interval (feet bTOC)	Proposed Monitoring Frequency ⁽¹⁾	Notes	Proposed Monitoring Parameters						Monitoring Schedule				Change Log ⁽⁴⁾		
					Indicator Hazardous Substances						MNA Parameters ⁽³⁾		2026				
					Total Arsenic by USEPA 6020B	GRO by NWTPH-Gx	Total DRO+ORO by NWTPH-Dx	Benzene by USEPA 8260D	CVOCs ⁽²⁾ by USEPA 8260D	Penta by USEPA 8270D SIM	Field Parameters	Q1	Q2	Q3		Q4	
East Waterfront Parcel Wells																	
Wells Designated for Analytical Sampling																	
02MW04R	Shallow	5–15	Quarterly (2023–2024)/ Annual (2025–2026)		X	X	X				X			IHS	Continue long-term monitoring in 2026.		
02MW07	Shallow	1.5–11.5	Quarterly (2023)/ Annual (2024–2026)		X	X	X	X			X			IHS	Continue long-term monitoring in 2026.		
02MW17	Shallow	1–11	Contingency (2023–2024)/ Annual (2025–2026)		X	X	X	X			X			IHS	Continue long-term monitoring in 2026.		
02MW19	Shallow	3–13	Quarterly (2023)/ Annual (2024–2026)		X	X	X	X			X			IHS	Continue long-term monitoring in 2026.		
02MW20R	Shallow	2.5–12.5	Annual (2025–2026)		X	X	X	X			X			IHS	Continue long-term monitoring in 2026.		
Wells Designated for Contingency or Water Level Monitoring Only																	
01MW83	Shallow	14–24	--	Retain for collection of additional performance data if needed.													

Notes:

- Blank cells are intentional.
- Wells not designated for short-term monitoring are considered sentinels and may be sampled at the Property Owner's discretion or at Ecology's request to obtain additional performance data, if needed. Water levels will be collected from the ASKO and Bulk Terminal monitoring wells designated for sampling and select other wells (01MW35, 01MW83, 01MW100, 01MW102, 01MW106, and 01MW107) semiannually (Q1 and Q3).
- Not established.
- Italics* Proposed well to be installed after redevelopment (if needed).
- 1 Wells designated for initial short-term monitoring will be sampled until grading and utility installation for Property redevelopment. Wells designated for redevelopment monitoring will be installed and sampled after grading has been completed.
- 2 CVOCs include TCE, DCE, and vinyl chloride.
- 3 Primary MNA parameters are field measurements that will be collected during every event and include dissolved oxygen, oxidation–reduction potential, pH, specific conductance, and temperature.
- 4 Additional changes:
 - The 2024 and 2025 schedule was completed and removed from the table.
 - Wells decommissioned in 2024 and 2025 were removed from the table.
 - Sentinel wells not designated for contingency use or water level monitoring were removed from the table (refer to Table A.1 for full well inventory list).

Abbreviations:

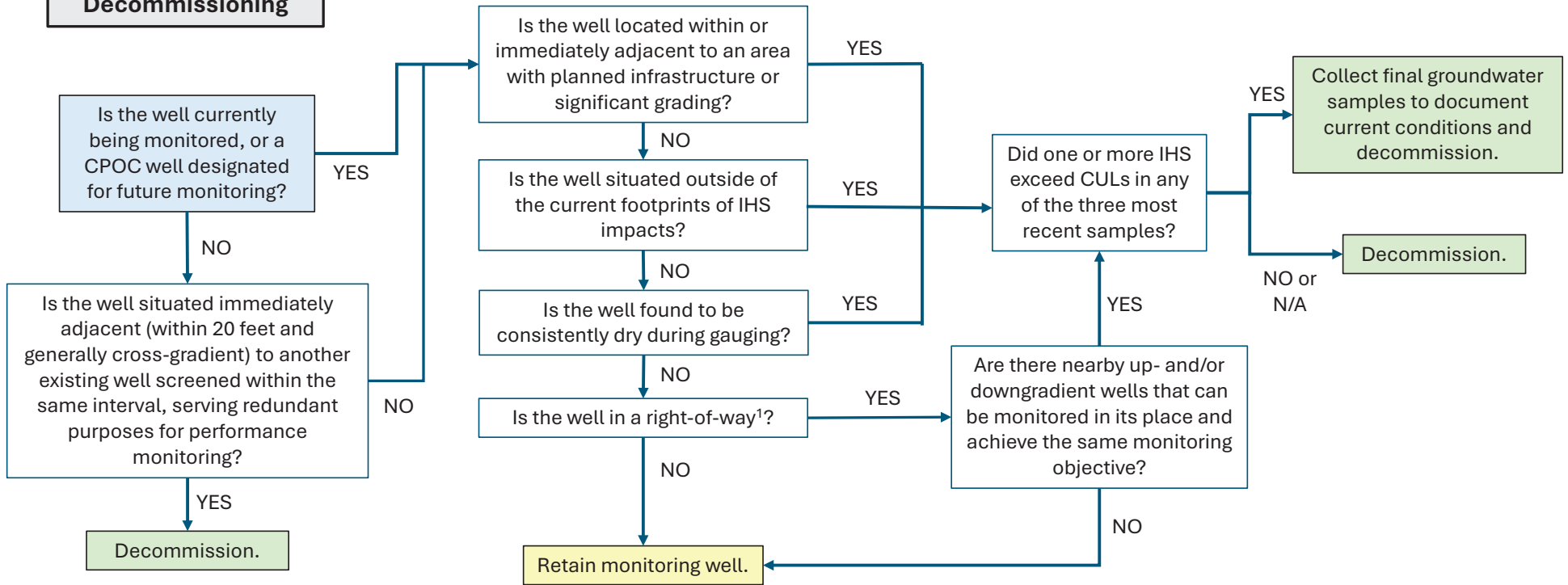
- ASKO ASKO Hydraulic
- BNSF BNSF Railway Company
- bTOC Below top of casing
- CPOC Conditional point of compliance
- CUL Cleanup level
- CVOC Chlorinated volatile organic compound
- DCE cis-1,2-Dichloroethene
- DRO Diesel-range organics
- Ecology Washington State Department of Ecology
- GMP Groundwater Monitoring Plan
- GRO Gasoline-range organics
- IHS Indicator hazardous substance
- MNA Monitored natural attenuation
- ORO Oil-range organics
- penta Pentachlorophenol
- Property The four parcels identified as "Bulk Terminal," "ASKO," "East Waterfront," and "West Waterfront"
- TCE Trichloroethene
- USEPA U.S. Environmental Protection Agency
- WBZ Water-bearing zone

Long-Term Compliance Monitoring Annual Report Appendix A: 2025 Groundwater Monitoring Annual Report

Time Oil Bulk Terminal

Attachment A.6 Decision Framework for Performance Monitoring Well Decommissioning

Decision Framework for Performance Monitoring Well Decommissioning



Notes:

- All well decommissioning decisions will be coordinated with Ecology, including the sufficiency of existing data in the vicinity of the well considered for decommissioning.
- 1. Right-of-way wells have historically sustained traffic damage and pose multiple safety hazards for field sampling.

Abbreviations:
 CPOC = Conditional point of compliance
 IHS = Indicator hazardous substance

APPENDIX B

2025 Vapor Intrusion Technical Memorandum

TO: Kim Hempel, Pioneer Engineering & Environmental Services, LLC

FROM: Jamie Stevens, P.E., CRETE Consulting LLC

PROJECT: Time Oil Bulk Terminal Site, Facility Site ID #75486194 and Cleanup Site ID #14604

SUBJECT: 2025 Vapor Intrusion – Lot F

DATE: February 20, 2026

Introduction

This memorandum documents vapor sampling completed at the Time Oil Bulk Terminal¹ (Property) located on W. Commodore Way in Seattle, Washington. The Property consists of four separate parcels (commonly identified as the Bulk Terminal parcel, ASKO Hydraulic parcel [ASKO parcel], East Waterfront parcel, and West Waterfront parcel) that were acquired by TOC Seattle Terminal 1, LLC (TOCST) in November 2020 under the terms of a Prospective Purchaser Consent Decree (PPCD) entered in King County Cause No. 20-2-15215-3 SEA (as amended).

Vapor Sampling at the Bulk Terminal parcel, Lot F (2707 West Commodore Way), was completed on June 4, 2025 to confirm the effective installation of the vapor barrier installed beneath the newly constructed 43,000 square foot building. Prior to construction of the concrete building slab, a 20 mil Drago Wrap Vapor barrier was installed. This vapor barrier was installed over the entire building slab footprint, including elevator sumps, and installed per the manufacturer's recommendations. The newly constructed building on Lot F is owned by Insite and the building is used as a self storage commercial facility; referred to as the "the building" in this technical memorandum. The Lot F development included the construction of a new building, installation of associated utilities, and completion of final site cap surfaces including parking, sidewalks, driving lanes and landscaping. Construction efforts are documented in the Second Quarter 2025 Ecology progress report². Construction activities were substantially completed in June 2025. Vapor sampling overlapped with the closeout of the construction activities prior to opening to the public on June 21, 2025.

Sample Locations and Methods

Vapor Sampling at the building was performed in accordance with the Vapor Intrusion Assessment and Mitigation Plan (VI Plan; Appendix C of the Long Term Compliance Monitoring Plan³, prepared by CRETE Consulting [CRETE]). Indoor (2 locations on the ground floor) and ambient air (2 locations representing upwind and downwind locations) vapor samples were collected over 8 hours on June 4, 2025. Sample locations are

¹ The parcels include King County Parcel Nos. 1125039050, 1125039081, 1125039120, and 4237900405, also referenced as Property for purposes of this LTCMP. The legal definition of the Site is set forth in the PPCD.

² Pioneer 2025. Quarterly Progress Report: April 1 through June 30, 2025. Time Oil Bulk Terminal Site, Cleanup Site ID #14604. July 14, 2025.

³ CRETE 2023. Long Term Compliance Monitoring Plan. February 10, 2023.

shown on Figure 1. Samples were collected using an integrated passive air sampler consisting of a 6-L laboratory-certified evacuated Summa canister.

Prior to sampling, a pre-sampling building walk through was completed on June 3, 2025 to help identify any potential indoor sources of site volatile organic compounds (VOCs). The building is a newly constructed building and thus all carpeting, flooring, ceiling tiles, cabinets, furniture, paint, caulking, and all other components of the building were brand new. Vapor sampling was staged to occur after at least 4 weeks of all major painting and finishing were installed. Some exterior painting had occurred within 2 weeks of the sampling event. Elevator service and building electrical occurred just prior to the sampling effort. New building materials can off-gas and release VOCs that could be detected in the indoor air samples. The period of time for off-gassing is difficult to predict as it depends on numerous external factors such as product specific construction, weather, duration since the product was manufactured, and installation methods. EPA guidance⁴ suggests a “flush out” for 3 to 90 days. The building HVAC system was operating for 40 days prior to sampling on June 4, 2025. It was observed that construction workers/building staff were smoking products outside of the building and then walking into the building during sampling on June 4, 2025. No observations of smoking within the building was observed, but it is assumed that some level of second-hand smoke was likely present on worker clothing and it is possible that second-hand smoke could have entered building spaces through external sources (such as doorways or building air intakes). Second-hand smoke can impact the quality of indoor air as common smoked products (tobacco cigarettes, vaping⁵ and marijuana⁶) are sources of known VOCs.

Other than the new building materials and external smoking, no other potential indoor sources were identified.

On June 3, 2025 a flush mount vapor sampling port (Vapor Pin[®] sampling device) was installed in the warehouse to monitor the pressure differential across the building slab during vapor sampling. The pressure monitoring location is shown on Figure 1. This monitoring port was installed per the manufacturer’s recommendations. During indoor air sampling on June 4, 2025, the pressure differential between the sub slab and the inside of the building was measured at the same time as the indoor air sampling event. Measurements were collected using a hand-held data logging pressure recorder (Zefon Omniguard).

The indoor air and ambient air samples were hand delivered, on the same day as sampling, to Friedman and Bruya analytical laboratory (Seattle, WA). Samples were analyzed for site Indicator Hazardous Substances (IHSs) which include: trichloroethylene (TCE), vinyl chloride, and benzene using U.S. Environmental Protection Agency (EPA) Total Organics Method TO-15 low-level (indoor air and ambient air samples) and aliphatic and aromatic petroleum hydrocarbons using Massachusetts Department of Environmental Protection Air-Phase Petroleum Hydrocarbons test methods.

Results

Indoor air and ambient air sample results are summarized on Table 1. Pressure differential measurements are summarized on Table 2. Copies of field forms are included in Attachment 1 and copies of laboratory reports are included in Attachment 2.

⁴ <https://www.epa.gov/iaq-schools/controlling-pollutants-and-sources-indoor-air-quality-design-tools-schools>

⁵ <https://www.epa.gov/indoor-air-quality-iaq/secondhand-smoke-and-electronic-cigarette-aerosols>

⁶ <https://www.epa.gov/indoor-air-quality-iaq/secondhand-marijuana-smoke-and-indoor-air-quality>

Vinyl chloride was not detected above the laboratory reporting limit in any sample. TCE (office only), benzene (mechanical room only) and TPH (both sample locations) were detected in the indoor air samples above site cleanup levels, which are based on MTCA Method B unrestricted values. Values were below the MTCA Method B commercial screening levels for all compounds (TCE, benzene and TPH) at both sample locations (office and mechanical room). The TPH value in the office location was also below the MTCA residential/unrestricted value when using Ecology's vapor guidance TPH risk-based analysis, provided in Attachment 3. The vapor guidance TPH risk-based analysis was reviewed by Ecology and accepted on July 1, 2025.⁷ The site CULs were developed prior to building redevelopment and provided flexibility for residential use (the driver for an unrestricted CUL). The current use of the building, and the entire Lot F development, is a commercial use self storage warehouse. No residential or other unrestricted use will occur at the Lot F development at this time or in the foreseeable future.

Conclusions

Vapor sampling was completed on June 4, 2025 at the Lot F building to satisfy the sampling requirements in the VI Plan. TCE, benzene and TPH were detected in the indoor air samples above site cleanup levels. All detections were below the MTCA Method B commercial screening levels. The current use of the building is a commercial use self storage warehouse.

The source of these VOC detections is not clear. It is known that new building materials, office supplies such as toner and ink, and cigarettes can be sources of VOCs⁸. As stated above, building construction was completed just prior to the vapor sampling event. The new building materials were likely off-gassing and could be a source of VOCs. Additionally, external factors such as smoking and mechanical room maintenance work (materials or equipment) could also be contributing to VOC results.

Because values are below the MTCA Method B commercial screening levels, no additional vapor mitigations are recommended. Ecology has requested a second confirmation round of vapor sampling to be conducted in the winter months at the building. This work is planned for the first quarter 2026.

Tables/Figures

Attachment 1: June 4, 2025 Sampling Notes

Attachment 2: Laboratory Results

Attachment 3: Vapor Guidance TPH Risk Based Analysis Backup

⁷ Email from T.Seeds on July 1, 2025 to J. Stevens subject line: RE: Time Oil Seattle - Lot F Building Vapor Sampling Results

⁸ <https://www.epa.gov/system/files/documents/2025-01/tce-compliance-guide.pdf>

<https://www.eli.org/vibrant-environment-blog/trichloroethylene-vapor-intrusion-and-indoor-air>

<https://www.epa.gov/indoor-air-quality-iaq/inside-story-guide-indoor-air-quality#:~:text=Keep%20exposure%20to%20benzene%20to,will%20not%20be%20used%20immediately>

Tables/Figures

**Table 1 - Summary of June 2025 Vapor Intrusion Assessment Results
Former Time Oil Site - Lot F (2707 West Commodore Way Project)**

Compounds	MTCA CUL (indoor air) Method B ug/m ³	MTCA Screening Level (indoor air) Method B Commercial ug/m ³	Indoor Air Samples		Ambient	
			Indoor1-060425	Indoor2-060425	Outdoor1-060425	Outdoor2-060425
			Indoor Office	Mechanical Room	Ambient North	Ambient South
			6/4/2025	6/4/2025	6/4/2025	6/4/2025
Trichloroethene	0.33	2.85	0.95	0.2	<0.09	<0.084
Vinyl chloride	0.28	1.33	<0.11	<0.12	<0.11	<0.1
Benzene	0.32	1.5	<0.27	0.76	<0.27	<0.25
<i>Analysis For Volatile Compounds By Method MA-DEP APH</i>						
APH EC5-8 aliphatics/ACGIH C5-8 aliphatics	NV	NV	120	130	<63	<58
APH EC9-12 aliphatics/ACGIH C9-15 aliphatics	NV	NV	62	150	<21	<19
APH EC9-10 aromatics/ACGIH C9-15 aromatics	NV	NV	<21	<24	<21	<19
TPH	46	390	182.0	280.0	<63	<58
TPH - Risk Factors	See Attachment 3	See Attachment 3	Pass -Method B Residential and Commercial	Pass - Method B - Commercial	NA	NA

Notes:

ug/m³ = micrograms per cubic meter

Bold = detected compound

Shade = exceeds site cleanup level (CUL)

TPH = Total Petroleum Hydrocarbons

NV = no value NA = not applicable

< = detected less than the lab reporting limit

APH - Air-Phase Petroleum Hydrocarbons

MA DEP - Massachusetts Department of Environmental Protection

**Table 2 - Pressure differential measurements - June 2025 Vapor Intrusion Assessment
Former Time Oil Site - Lot F (2707 West Commodore **

Omniguard 5 Output

Values collected during 5 min sampling period.

" WC = inches water column

Time	HI "WC	LOW "WC	Average
average	0.00676	-0.00710	-0.00017
6/4/25 6:50 AM	0	-0.025	-0.0125
6/4/25 6:55 AM	0	-0.003	-0.0015
6/4/25 7:00 AM	0.031	-0.008	0.0115
6/4/25 7:05 AM	0.004	0	0.002
6/4/25 7:10 AM	0.027	-0.004	0.0115
6/4/25 7:15 AM	0.004	0.002	0.003
6/4/25 7:20 AM	0.005	0	0.0025
6/4/25 7:25 AM	0.028	-0.004	0.012
6/4/25 7:30 AM	0.02	-0.011	0.0045
6/4/25 7:35 AM	0.002	0	0.001
6/4/25 7:40 AM	0.004	0	0.002
6/4/25 7:45 AM	0.003	0	0.0015
6/4/25 7:50 AM	0.003	0	0.0015
6/4/25 7:55 AM	0.002	0	0.001
6/4/25 8:00 AM	0.002	0	0.001
6/4/25 8:05 AM	0.004	0	0.002
6/4/25 8:10 AM	0.003	0	0.0015
6/4/25 8:15 AM	0.002	0	0.001
6/4/25 8:20 AM	0.003	-0.002	0.0005
6/4/25 8:25 AM	0.003	-0.002	0.0005
6/4/25 8:30 AM	0.003	-0.003	0
6/4/25 8:35 AM	0	0	0
6/4/25 8:40 AM	0	0	0
6/4/25 8:45 AM	0.003	-0.01	-0.0035
6/4/25 8:50 AM	0.007	-0.007	0
6/4/25 8:55 AM	0	-0.006	-0.003
6/4/25 9:00 AM	0	0	0
6/4/25 9:05 AM	0.003	-0.002	0.0005
6/4/25 9:10 AM	0.004	-0.017	-0.0065
6/4/25 9:15 AM	0.003	-0.004	-0.0005
6/4/25 9:20 AM	0	-0.005	-0.0025
6/4/25 9:25 AM	0.003	-0.005	-0.001
6/4/25 9:30 AM	0.004	-0.002	0.001
6/4/25 9:35 AM	0.002	-0.004	-0.001
6/4/25 9:40 AM	0.003	-0.005	-0.001
6/4/25 9:45 AM	0	-0.008	-0.004
6/4/25 9:50 AM	0.003	-0.002	0.0005
6/4/25 9:55 AM	0.003	0	0.0015
6/4/25 10:00 AM	0.006	0.002	0.004
6/4/25 10:05 AM	0.004	0	0.002
6/4/25 10:10 AM	0.03	-0.011	0.0095
6/4/25 10:15 AM	0.003	0	0.0015
6/4/25 10:20 AM	0.002	0	0.001
6/4/25 10:25 AM	0.002	-0.001	0.0005
6/4/25 10:30 AM	0	-0.009	-0.0045
6/4/25 10:35 AM	-0.002	-0.007	-0.0045
6/4/25 10:40 AM	0.003	-0.007	-0.002
6/4/25 10:45 AM	0.002	-0.003	-0.0005
6/4/25 10:50 AM	0	-0.009	-0.0045
6/4/25 10:55 AM	0	-0.005	-0.0025
6/4/25 11:00 AM	0.006	-0.006	0
6/4/25 11:05 AM	0.007	-0.002	0.0025
6/4/25 11:10 AM	0.004	-0.005	-0.0005

Time	HI "WC	LOW "WC	Average
average	0.00676	-0.00710	-0.00017
6/4/25 11:15 AM	0.004	-0.01	-0.003
6/4/25 11:20 AM	0.007	-0.003	0.002
6/4/25 11:25 AM	0.006	-0.003	0.0015
6/4/25 11:30 AM	0.006	-0.003	0.0015
6/4/25 11:35 AM	0.006	-0.004	0.001
6/4/25 11:40 AM	0.008	-0.003	0.0025
6/4/25 11:45 AM	0.004	-0.007	-0.0015
6/4/25 11:50 AM	0.005	-0.011	-0.003
6/4/25 11:55 AM	0.007	-0.008	-0.0005
6/4/25 12:00 PM	0.005	-0.006	-0.0005
6/4/25 12:05 PM	0.002	-0.009	-0.0035
6/4/25 12:10 PM	0.003	-0.007	-0.002
6/4/25 12:15 PM	0.004	-0.012	-0.004
6/4/25 12:20 PM	0.006	-0.006	0
6/4/25 12:25 PM	0.02	-0.017	0.0015
6/4/25 12:30 PM	0.012	-0.013	-0.0005
6/4/25 12:35 PM	0.007	-0.004	0.0015
6/4/25 12:40 PM	0.009	-0.006	0.0015
6/4/25 12:45 PM	0.009	-0.018	-0.0045
6/4/25 12:50 PM	0.011	-0.015	-0.002
6/4/25 12:55 PM	0.014	-0.009	0.0025
6/4/25 1:00 PM	0.006	-0.009	-0.0015
6/4/25 1:05 PM	0.006	-0.018	-0.006
6/4/25 1:10 PM	0.003	-0.041	-0.019
6/4/25 1:15 PM	0.015	-0.029	-0.007
6/4/25 1:20 PM	0.015	-0.017	-0.001
6/4/25 1:25 PM	0.012	-0.009	0.0015
6/4/25 1:30 PM	0.009	-0.025	-0.008
6/4/25 1:35 PM	0.011	-0.016	-0.0025
6/4/25 1:40 PM	0.013	-0.023	-0.005
6/4/25 1:45 PM	0.007	-0.017	-0.005
6/4/25 1:50 PM	0.013	-0.019	-0.003
6/4/25 1:55 PM	0.015	-0.013	0.001
6/4/25 2:00 PM	0.011	-0.009	0.001
6/4/25 2:05 PM	0.012	-0.011	0.0005
6/4/25 2:10 PM	0.012	-0.029	-0.0085
6/4/25 2:15 PM	0.01	-0.005	0.0025
6/4/25 2:20 PM	0.008	0	0.004
6/4/25 2:25 PM	0.023	-0.008	0.0075
6/4/25 2:30 PM	0.007	-0.003	0.002
6/4/25 2:35 PM	0.01	-0.006	0.002
6/4/25 2:40 PM	0.019	-0.012	0.0035
6/4/25 2:45 PM	0.007	-0.004	0.0015
6/4/25 2:50 PM	0.008	-0.008	0
6/4/25 2:55 PM	0.006	-0.005	0.0005
6/4/25 3:00 PM	0.005	-0.004	0.0005
6/4/25 3:05 PM	0.003	-0.006	-0.0015
6/4/25 3:10 PM	0.006	0	0.003
5/4/25 3:15 PM	0.005	-0.004	0.0005

Vapor Indoor Air Sample Location
(Ambient vapor sample locations are not shown on this figure, the ambient locations will depend on wind conditions during sampling)



Pressure Differential Sample Location

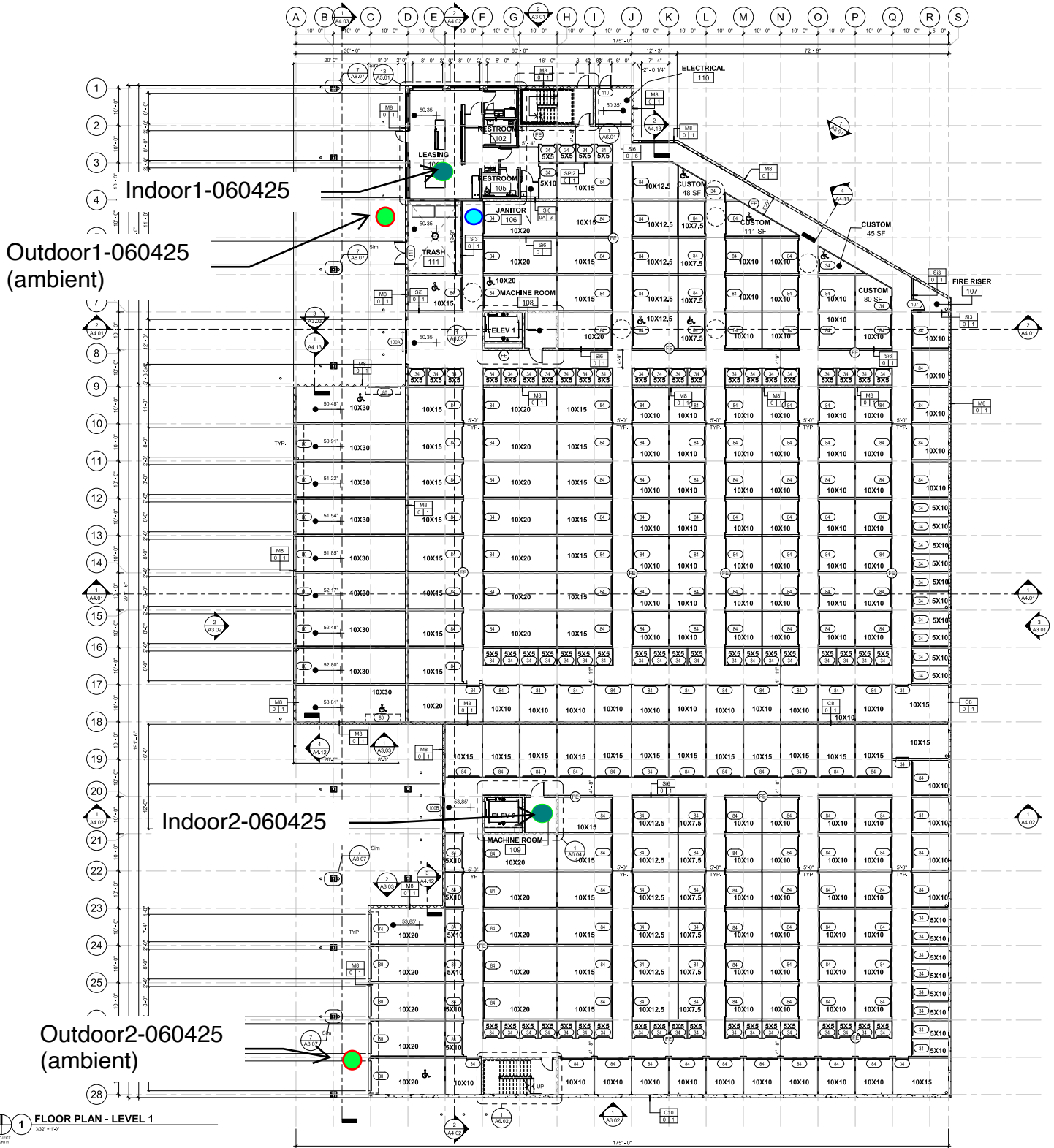


Figure 1
Building F Sample Locations

Attachment 1: June 4, 2025 Sampling Notes

Indoor Air/Ambient Air Sampling - Field Form							
Project		TOEST1 / Secure Space					
Sampler		Rusty Jones					
Date and Start Time		6.04.2025 ~ 0651					
Date and End Time		6.04.2025					
Weather (attach copies of detailed weather reports)		See separate info. Overcast humid, low to mid 50sF on setup.					
Sample Port Type		Open inlet tube 58" AGS					
Indoor or Ambient Location		Indoor, "8-Hour"					
Location ID	INDOOR1 - 060425						
Location Details	In leasing office, on counter top in carpeted areas						
Sample Canister LAB ID	PN 29-10622 SN 37235	Flow Controller LAB ID	Eutech Model# CS1200ES SN 15208		Sample Canister Size	Eutech Silurite 6L	
Start Sample Time	0654	Start Pressure (" Hg)	30+	End Sample Time	1450	End Pressure (" Hg)	3-4
Analysis							
Sample Collection Notes/General Observations							
Date	Time	Canister Vacuum (in Hg)	Weather Conditions/Barometric Pressure (in Hg)				
6/4/2025	0904	25					
6/4/2025	1006	21					
6/4/2025	1221	13					
6/4/2025	1421	6					
Observations/VOC product inventory around sample location							
List any potential VOC containing products observed around sample location:							
Carpet → carpet adhesive							
Concrete floor → Noxcrete concrete floor sealer							
Velcro adhesive @ countertop							
Nearby sharpies, highlighters							
Was HVAC Fan On?		Yes, thermostat set to 77°F					
Was Heat on?		Heat + cool as needed to maintain 77°F					

☆ Barometric Pressure in [Seattle, WA](#)

30.13 inHg ⁱ

Powered by  Weather

Temperature

55°F

Humidity

85%

Wind

2mph S



Forecast

The pressure in Seattle, WA is expected to hold steady in the coming hours. Over the next 72 hours, the pressure will climb to a high of 30.13 inHg on Wednesday at around 7am and then reach a low of 29.96 inHg on Friday at around 6pm. The average pressure for this period will be 30.05 inHg, which is considered to be within the normal range. The average daily total fluctuation is 0.16 inHg, which is the sum of all the pressure changes from hour to hour in a single day (24-hour period) divided by the number of days shown. Compared to fluctuations in cities around the world, the daily (intraday) fluctuation forecasted in Seattle, WA is relatively small and mellow, meaning that from hour to hour, the pressure is quite stable. The average daily range, which is the average difference between the highest and lowest pressures within each 24-hour window, is 0.08 inHg. Compared to the daily ranges in other human-inhabited places, this is very narrow, meaning that the pressure here is very stable. (Note that this metric is based on daily ranges, so sometimes the multi-day variance can be much larger than is described, especially at higher latitudes.)

[Hide details](#)

Next 72 hours



History

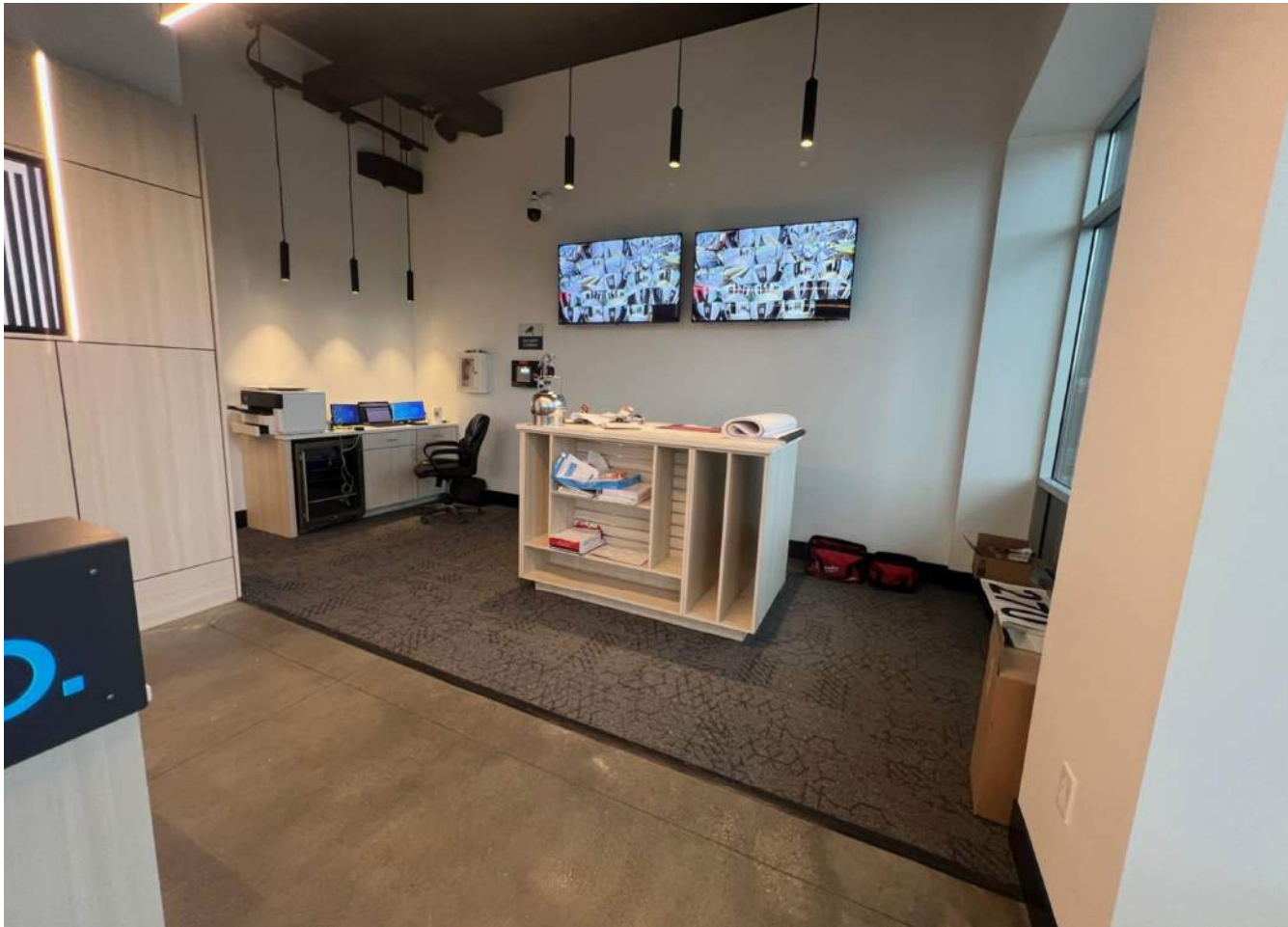
✓ The following graph displays the barometric pressure history in Seattle, WA over the past 72 hours. During this time period, the average pressure was 30.04 inHg, which is considered to be within the normal range. With an average daily fluctuation of 0.10 inHg, this was relatively small and mellow, meaning that from hour to hour, the pressure is quite stable. The average daily range of 0.1 inHg, was on

Indoor Air/Ambient Air Sampling - Field Form							
Project		TOCST1 / Secure Space					
Sampler		Rusty Jones					
Date and Start Time		6.04.2025 ~0659					
Date and End Time		6.04.2025					
Weather (attach copies of detailed weather reports)		See separate info. Overcast, humid, low to mid SWSF on setup.					
Sample Port Type		Open inlet tube 60" AGS					
Indoor or Ambient Location		Indoor, "8-Hour"					
Location ID		INDOOR2-060425					
Location Details		Machine room with Elevator 2 equipment. Electrical equipment.					
Sample Canister	PN 29-10621	Flow Controller	Entech Model #CG1200E		Sample Canister Size	Entech Silonite 6L	
LAB ID	SN 18562	LAB ID	SN 07853				
Start Sample Time	0701	Start Pressure (" Hg)	30	End Sample Time	1500	End Pressure (" Hg)	5
Analysis							
Sample Collection Notes/General Observations							
Date	Time	Canister Vacuum (in Hg)	Weather Conditions/Barometric Pressure (in Hg)				
6/4/2025	0908	~25					
6/4/2025	1009	20					
6/4/2025	1224	13-14					
6/4/2025	1425	7					
Observations/VOC product inventory around sample location							
List any potential VOC containing products observed around sample location:							
Electrical equipment							
NoxCrete concrete floor sealer							
Drywall mud/sealer, no paint yet							
Was HVAC Fan On?				Auto, set @ 68F, mini-split			
Was Heat on?				Fan on mini-split			

Indoor Air/Ambient Air Sampling - Field Form							
Project		TOCST1 / Secure Space					
Sampler		Rusty Jones					
Date and Start Time		6.04.2025 ~0703					
Date and End Time		6.04.2025					
Weather (attach copies of detailed weather reports)		See separate info. Overcast humid, low-to-mid. SDSF on setup					
Sample Port Type		Open inlet tube 63" AGS					
Indoor or Ambient Location		Outdoor ambient, "8-hour"					
Location ID		OUTDOOR1-060425					
Location Details		Southwest corner of building, in pavement area near wall and storage units, under canopy.					
Sample Canister LAB ID	Eutech PN 29-10621 SN 18565	Flow Controller LAB ID	Eutech Model # CS1200ES SN 20490	Sample Canister Size	Eutech Silante 6L		
Start Sample Time	0705	Start Pressure (" Hg)	30+	End Sample Time	1504	End Pressure (" Hg)	4
Analysis							
Sample Collection Notes/General Observations							
Date	Time	Canister Vacuum (in Hg)	Weather Conditions/Barometric Pressure (in Hg)				
6/4/2025	0904 ¹ 0907	24-25					
6/4/2025	1012	20-21					
6/4/2025	1225	13					
6/4/2025	1424	10					
Observations/VOC product inventory around sample location							
List any potential VOC containing products observed around sample location:							
Nearby storage units used by contractors with tools and chemicals							
Weathered membrane cleaner, motor oil							
open paint cans, acetone, mineral spirits							
Was HVAC Fan On?		N/A		outdoor			
Was Heat on?							

Indoor Air/Ambient Air Sampling - Field Form							
Project		TOCST1 / Secure Space					
Sampler		Rusty Jones					
Date and Start Time		6.04.2025 ~ 0709					
Date and End Time		6.04.2025					
Weather (attach copies of detailed weather reports)		See separate info. Overcast, humid, low-mid 50sF on setup					
Sample Port Type		Open inlet ports tubing 43" 40" AGS					
Indoor or Ambient Location		Outdoor ambient, "8-hour"					
Location ID	OUTDOOR 2-060425						
Location Details	Northwest corner of building, outside but next to leasing office, mostly under canopy						
Sample Canister LAB ID	ENTECH PN 2910622 SN 40712	Flow Controller LAB ID	ENTECH Model # CS1200ES SN 13966	Sample Canister Size	Entech Silonite 6L		
Start Sample Time	0713	Start Pressure (" Hg)	30+	End Sample Time	1514	End Pressure (" Hg)	4
Analysis							
Sample Collection Notes/General Observations							
Date	Time	Canister Vacuum (in Hg)	Weather Conditions/Barometric Pressure (in Hg)				
6/4/2025	0904	24					
6/4/2025	1005	22					
6/4/2025	1220	14					
6/4/2025	1420	6-7					
Observations/VOC product inventory around sample location							
List any potential VOC containing products observed around sample location:							
Nearby electrical transformer.							
Nearby parking space (vehicle exhaust)							
Nearby road (W. Commodore Way) vehicle exhaust							
Was HVAC Fan On?				N/A outdoor			
Was Heat on?							

Vapor Sampling at Lot F (2707 West Commodore Way Project)
June 4, 2025



Indoor Air Sample Location 1 (Indoor1-060425)
Office Location

Vapor Sampling at Lot F (2707 West Commodore Way Project)
June 4, 2025



Indoor Air Sample Location 2 - Indoor2-060425
Mechanical Room

Vapor Sampling at Lot F (2707 West Commodore Way Project)
June 4, 2025



Outdoor Sample Location 1 - Outdoor1-060425
North



Outdoor Sample Location 2 - Outdoor2-060425
South

Attachment 2: Laboratory Results

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

June 11, 2025

Rusty Jones, Project Manager
Crete Consulting
16300 Christensen Road, Suite 214
Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on June 4, 2025 from the TOCST1/Secure Space, F&BI 506079 project. There are 14 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Jamie Stevens, Kim Hempel
CTC0611R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 4, 2025 by Friedman & Bruya, Inc. from the Crete Consulting TOCST1/Secure Space, F&BI 506079 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Crete Consulting</u>
506079 -01	Indoor1-060425
506079 -02	Indoor2-060425
506079 -03	Outdoor1-060425
506079 -04	Outdoor2-060425

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Indoor1-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-01 1/0.84
Date Analyzed:	06/05/25	Data File:	060516.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	120
APH EC9-12 aliphatics	62
APH EC9-10 aromatics	<21

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Indoor2-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-02 1/0.95
Date Analyzed:	06/05/25	Data File:	060515.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	130
APH EC9-12 aliphatics	150
APH EC9-10 aromatics	<24

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Outdoor1-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-03 1/0.84
Date Analyzed:	06/05/25	Data File:	060514.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<63
APH EC9-12 aliphatics	<21
APH EC9-10 aromatics	<21

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Outdoor2-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-04 1/0.78
Date Analyzed:	06/05/25	Data File:	060513.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<58
APH EC9-12 aliphatics	<19
APH EC9-10 aromatics	<19

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	TOCST1 Secure Space
Date Collected:	Not Applicable	Lab ID:	05-1325 mb
Date Analyzed:	06/05/25	Data File:	060512.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Indoor1-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-01 1/0.84
Date Analyzed:	06/05/25	Data File:	060516.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.11	<0.042
Benzene	<0.27	<0.084
Trichloroethene	0.95	0.18

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Indoor2-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-02 1/0.95
Date Analyzed:	06/05/25	Data File:	060515.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.12	<0.047
Benzene	0.76	0.24
Trichloroethene	0.20	0.037

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Outdoor1-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-03 1/0.84
Date Analyzed:	06/05/25	Data File:	060514.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.11	<0.042
Benzene	<0.27	<0.084
Trichloroethene	<0.09	<0.017

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Outdoor2-060425	Client:	Crete Consulting
Date Received:	06/04/25	Project:	TOCST1 Secure Space
Date Collected:	06/04/25	Lab ID:	506079-04 1/0.78
Date Analyzed:	06/05/25	Data File:	060513.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.1	<0.039
Benzene	<0.25	<0.078
Trichloroethene	<0.084	<0.016

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Crete Consulting
Date Received:	Not Applicable	Project:	TOCST1 Secure Space
Date Collected:	Not Applicable	Lab ID:	05-1325 mb
Date Analyzed:	06/05/25	Data File:	060512.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.13	<0.05
Benzene	<0.32	<0.1
Trichloroethene	<0.11	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/11/25

Date Received: 06/04/25

Project: TOCST1/Secure Space, F&BI 506079

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES
FOR VOLATILES BY METHOD MA-APH**

Laboratory Code: 506079-01 1/0.84 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	120	130	8
APH EC9-12 aliphatics	ug/m3	62	62	0
APH EC9-10 aromatics	ug/m3	<21	<21	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	79	70-130
APH EC9-12 aliphatics	ug/m3	67	91	70-130
APH EC9-10 aromatics	ug/m3	67	91	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/11/25

Date Received: 06/04/25

Project: TOCST1/Secure Space, F&BI 506079

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES
FOR VOLATILES BY METHOD TO-15**

Laboratory Code: 506079-01 1/0.84 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 25)
Vinyl chloride	ug/m3	<0.11	<0.11	nm
Benzene	ug/m3	<0.27	<0.27	nm
Trichloroethene	ug/m3	0.95	1.0	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	97	70-130
Benzene	ug/m3	43	98	70-130
Trichloroethene	ug/m3	73	113	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.
- c - The presence of the analyte may be due to carryover from previous sample injections.
- cf - The sample was centrifuged prior to analysis.
- d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv - Insufficient sample volume was available to achieve normal reporting limits.
- f - The sample was laboratory filtered prior to analysis.
- fb - The analyte was detected in the method blank.
- fc - The analyte is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs - Headspace was present in the container used for analysis.
- ht - The analysis was performed outside the method or client-specified holding time requirement.
- ip - Recovery fell outside of control limits due to sample matrix effects.
- j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- lc - The presence of the analyte is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 506079 CLIENT Crete INITIALS/ DATE: AP 6/4/25

If custody seals are present on cooler, are they intact? NA YES NO

Cooler/Sample temperature 24 °C Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? YES NO

How did samples arrive? Over the Counter Picked up by F&BI FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? YES NO Initials/ Date: NP 6/5
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 4 days

Are the samples clearly identified? (explain "no" answer below) YES NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) YES NO

Were appropriate sample containers used? YES NO Unknown

If custody seals are present on samples, are they intact? NA YES NO

Are samples requiring no headspace, headspace free? NA YES NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

- Sample ID's Yes No _____ Not on COC/label
- Date Sampled Yes No _____ Not on COC/label
- Time Sampled Yes No _____ Not on COC/label
- # of Containers Yes No _____
- Relinquished Yes No _____
- Requested analysis Yes On Hold _____

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? NA YES NO

Number of unused TO15 canisters** 2 Number of unused TO17 tubes _____

**Fill out Green manifolds billing sheet
S/N 21440, 20552

Attachment 3: Vapor Guidance TPH Risk Based Analysis Backup

Attachment 3

Petroleum Air Compliance Spreadsheets - Summary of Results

June 2025 Vapor Data - Time Oil Seattle - Lot F

	Sample ID (2025 Vapor Sampling Event)	Indoor1-060425	Indoor2-060425
Results	Location (2025 Vapor Sampling Event)	Indoor Office	Mechanical Room
Sample is in compliance if all of the following are true: 1) Hazard index in purple cell L42 doesn't exceed 1 2) Total cancer risk in purple cell M42 doesn't exceed 1E-05 3) Individual cancer risks in column M don't exceed 1E-06.	2025 Summary - Method B		
	pass	pass	pass
	pass	pass	pass
	pass	pass	fail
Sample is in compliance if all of the following are true: 1) Hazard index in purple cell L42 doesn't exceed 1 2) Total cancer risk in purple cell M42 doesn't exceed 1E-05 3) Individual cancer risks in column M don't exceed 1E-06.	2025 Summary - Method B Commercial		
	pass	pass	pass
	pass	pass	pass
	pass	pass	pass
Sample is in compliance if all of the following are true: 1) Hazard index in purple cell L42 doesn't exceed 1 2) Total cancer risk in purple cell M42 doesn't exceed 1E-05 3) Individual cancer risks in column M don't exceed 1E-05.	2025 Summary - Method C		
	pass	pass	pass
	pass	pass	pass
	pass	pass	pass

Evaluating Compliance with Method B Air Cleanup Levels for Petroleum

Equations

- 1) Noncancer inhalation intake factor: $IIF = ABW \times UCF \times HQ \times AT / (BR \times ED \times EF)$
- 2) Cancer inhalation intake factor: $IIF = Risk \times ABW \times AT \times UCF / (BR \times ED \times EF)$
- 3) Noncancer cleanup level: $CUL = IIF \times RfDi / ABS$
- 4) TPH CUL = Total Adjusted Concentration (D43) / Total Noncancer Hazard (L43)
- 5) Cancer cleanup level: $CUL = IIF / (CPF_i \times ABS)$
- 6) Hazard Quotient = Adjusted Concentration / Noncancer CUL
- 7) Cancer Risk = Adjusted Concentration x 1E-6 / Cancer CUL

Instructions

Input measured concentrations in green cells B28-B41 and C28-C41. If the fraction/component was not detected in the sample but was detected elsewhere on site, enter half the detection limit. If the fraction/component wasn't analyzed or was never detected anywhere on site, enter 0 mg/kg.

Exposure Parameters

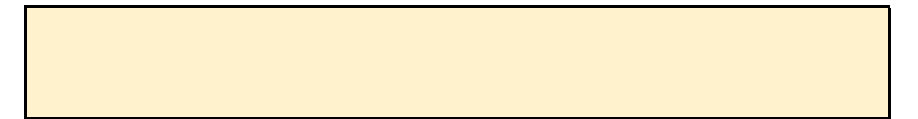
Parameter	Abbrev.	Noncancer	Cancer	Units
Average body weight	ABW	16	70	kg
Target risk	Risk	--	1E-06	unitless
Unit conversion factor	UCF	1,000	1,000	ug/mg
Hazard quotient	HQ	1	--	unitless
Averaging time	AT	6	75	yr
Breathing rate	BR	10	20	m3/day
Exposure duration	ED	6	30	yr
Exposure frequency	EF	1	1	unitless
Inhalation intake factor (Equations 1 and 2 above)	IIF	1.60E+03	8.75E-03	kg-ug-day/ mg-m3

Source: MTCA Equations 750-1 and 750-2

Results

Sample is in compliance if all of the following are true:

- 1) Hazard index in purple cell L42 doesn't exceed 1
- 2) Total cancer risk in purple cell M42 doesn't exceed 1E-05
- 3) Individual cancer risks in column M don't exceed 1E-06.



Noncancer Hazards and Cancer Risks for Air Sample

Sample ID: Indoor1-060425

Fraction or Component	Concentration Data				Toxicity Data			Cleanup Levels			Evaluating Compliance	
	Measured Site Concentration (ug/m3)	Measured Ambient Conc. (ug/m3)	Adjusted Concentration (ug/m3)	Proportion of TPH (percent)	RfDi (mg/kg-day)	CPF _i (risk per mg/kg-day)	ABS (unitless)	Noncancer CUL (ug/m3)	Cancer CUL (ug/m3)	Minimum CUL (ug/m3)	Noncancer Hazard (unitless)	Cancer Risk (unitless)
Aliphatics EC>5-8	120	30.25	8.98E+01	63.1%	1.71E+00	--	1	2.74E+03	--	2.74E+03	3.28E-02	--
Aliphatics EC>8-12	62	9.75	5.23E+01	36.8%	2.86E-02	--	1	4.58E+01	--	4.58E+01	1.14E+00	--
Aliphatics EC>12-16	0	0	0.00E+00	0.0%	2.86E-02	--	1	4.58E+01	--	4.58E+01	--	--
Aromatics EC>9-10 (note a)	0	0	0.00E+00	0.0%	1.14E-01	--	1	1.82E+02	--	1.82E+02	--	--
Aromatics EC>10-12	0	0	0.00E+00	0.0%	8.57E-04	--	1	1.37E+00	--	1.37E+00	--	--
Aromatics EC>12-16	0	0	0.00E+00	0.0%	1.14E-04	--	1	1.82E-01	--	1.82E-01	--	--
Benzene	0.27	0.13	1.40E-01	0.1%	8.57E-03	2.73E-02	1	1.37E+01	3.21E-01	3.21E-01	1.02E-02	4.37E-07
Ethylbenzene	0	0	0.00E+00	0.0%	2.86E-01	--	1	4.58E+02	--	4.58E+02	--	--
Toluene	0	0	0.00E+00	0.0%	1.43E+00	--	1	2.29E+03	--	2.29E+03	--	--
Total xylenes	0	0	0.00E+00	0.0%	2.86E-02	--	1	4.58E+01	--	4.58E+01	--	--
Naphthalene (note a)	0	0	0.00E+00	0.0%	8.57E-04	1.19E-01	1	1.37E+00	7.35E-02	7.35E-02	--	--
1,2-Dichloroethane (EDC)	0	0	0.00E+00	0.0%	2.00E-03	9.10E-02	1	3.20E+00	9.62E-02	9.62E-02	--	--
Ethylene dibromide (EDB)	0	0	0.00E+00	0.0%	2.57E-03	2.10E+00	1	4.11E+00	4.17E-03	4.17E-03	--	--
Methyl tert-butyl ether (MTBE)	0	0	0.00E+00	0.0%	8.57E-01	9.10E-04	1	1.37E+03	9.62E+00	9.62E+00	--	--
Total (sum of rows 28-41) (note b)	1.82E+02	4.01E+01	1.42E+02	100.0%	--	--	Total TPH:	1.20E+02	--	1.20E+02	1	4E-07
Source	Site-specific	Site-specific	Note a	--	Ecology (2022) App. E, CLARC	CLARC	Default	Equation 3 TPH: Equation 4	Equation 5	--	Equation 6 Note c	Equation 7 Note c

Noncancer Hazards and Cancer Risks for Air Sample

Sample ID: Indoor2-060425

Fraction or Component	Concentration Data				Toxicity Data			Cleanup Levels			Evaluating Compliance	
	Measured Site Concentration (ug/m3)	Measured Ambient Conc. (ug/m3)	Adjusted Concentration (ug/m3)	Proportion of TPH (percent)	RfDi (mg/kg-day)	CPFi (risk per mg/kg-day)	ABS (unitless)	Noncancer CUL (ug/m3)	Cancer CUL (ug/m3)	Minimum CUL (ug/m3)	Noncancer Hazard (unitless)	Cancer Risk (unitless)
Aliphatics EC>5-8	130	30.25	9.98E+01	70.2%	1.71E+00	--	1	2.74E+03	--	2.74E+03	3.65E-02	--
Aliphatics EC>8-12	150	9.75	1.40E+02	98.7%	2.86E-02	--	1	4.58E+01	--	4.58E+01	3.06E+00	--
Aliphatics EC>12-16	0	0	0.00E+00	0.0%	2.86E-02	--	1	4.58E+01	--	4.58E+01	--	--
Aromatics EC>9-10 (note a)	0	0	0.00E+00	0.0%	1.14E-01	--	1	1.82E+02	--	1.82E+02	--	--
Aromatics EC>10-12	0	0	0.00E+00	0.0%	8.57E-04	--	1	1.37E+00	--	1.37E+00	--	--
Aromatics EC>12-16	0	0	0.00E+00	0.0%	1.14E-04	--	1	1.82E-01	--	1.82E-01	--	--
Benzene	0.76	0.13	6.30E-01	0.4%	8.57E-03	2.73E-02	1	1.37E+01	3.21E-01	3.21E-01	4.59E-02	1.97E-06
Ethylbenzene	0	0	0.00E+00	0.0%	2.86E-01	--	1	4.58E+02	--	4.58E+02	--	--
Toluene	0	0	0.00E+00	0.0%	1.43E+00	--	1	2.29E+03	--	2.29E+03	--	--
Total xylenes	0	0	0.00E+00	0.0%	2.86E-02	--	1	4.58E+01	--	4.58E+01	--	--
Naphthalene (note a)	0	0	0.00E+00	0.0%	8.57E-04	1.19E-01	1	1.37E+00	7.35E-02	7.35E-02	--	--
1,2-Dichlorethane (EDC)	0	0	0.00E+00	0.0%	2.00E-03	9.10E-02	1	3.20E+00	9.62E-02	9.62E-02	--	--
Ethylene dibromide (EDB)	0	0	0.00E+00	0.0%	2.57E-03	2.10E+00	1	4.11E+00	4.17E-03	4.17E-03	--	--
Methyl tert-butyl ether (MTBE)	0	0	0.00E+00	0.0%	8.57E-01	9.10E-04	1	1.37E+03	9.62E+00	9.62E+00	--	--
Total (sum of rows 28-41) (note b)	2.81E+02	4.01E+01	2.41E+02	169.3%	--	--	Total TPH:	7.65E+01	--	7.65E+01	3	2E-06
Source	Site-specific	Site-specific	Note a	--	Ecology (2022) App. E, CLARC	CLARC	Default	Equation 3 TPH: Equation 4	Equation 5	--	Equation 6 Note c	Equation 7 Note c

Notes

a) The concentration of each fraction or component under Measured Ambient Conc. (column C) is subtracted from the corresponding concentration under Measured Site Concentration (column B) to correct for ambient background concentrations. In addition, the concentration of naphthalene is subtracted from the concentration of aromatics EC >9-10 to avoid double counting per Section E-6 of Ecology's (2022) vapor intrusion guidance. If the subtraction returns a negative result, it is adjusted up to zero. Ambient air samples must be collected consistent with Section 4.7 of Ecology's (2022) VI guidance and the ambient air adjustment must be approved by the Ecology site manager.

b) Total CUL (cells I42 and K42) is calculated for informational purposes but should not be used to evaluate other air samples because the compositions of other samples could be different. Total hazard index (purple cell K42) includes all fractions and components, assuming all have common target organs per WAC 173-340-750(3)(b)(ii)(C).

c) If the fraction or component was not analyzed or not detected on site, no hazard quotient or cancer risk appears in this column. If the fraction/component was detected on site but the ambient concentration was higher, a value of zero appears in this column.

Reference

Ecology. 2022. Guidance for Evaluating Vapor Intrusion in Washington State. Publ. no. 09-09-047.

Additional Abbreviations

-- - no value because parameter isn't relevant in this case
 ABS - inhalation absorption fraction
 CLARC - Cleanup Levels and Risk Calculation database
 CPFi - inhalation carcinogenic potency factor
 CUL - cleanup level
 EC - effective carbon chain length
 na - not analyzed
 RfDi - inhalation reference dose
 TPH - total petroleum hydrocarbons

Evaluating Compliance with Commercial Air Remediation Levels for Petroleum

Equations

- 1) Noncancer inhalation intake factor: $IIF = ABW \times UCF \times HQ \times AT / (BR \times ED \times EF)$
- 2) Cancer inhalation intake factor: $IIF = Risk \times ABW \times AT \times UCF / (BR \times ED \times EF)$
- 3) Noncancer cleanup level: $CUL = IIF \times RfDi / ABS$
- 4) TPH CUL = Total Adjusted Concentration (D43) / Total Noncancer Hazard (L43)
- 5) Cancer cleanup level: $CUL = IIF / (CPF_i \times ABS)$
- 6) Hazard Quotient = Adjusted Concentration / Noncancer CUL
- 7) Cancer Risk = Adjusted Concentration x 1E-6 / Cancer CUL
- 8) Exposure Frequency = $ET \times WD / (24 \times 365)$

Instructions

Input measured concentrations in green cells B28-B41. If the fraction/component was not detected in the sample but was detected elsewhere on site, enter half the detection limit. If the fraction/component wasn't analyzed or was never detected anywhere on site, enter 0 mg/kg.

Results

- Sample is in compliance if all of the following are true:
- 1) Hazard index in purple cell L42 doesn't exceed 1
 - 2) Total cancer risk in purple cell M42 doesn't exceed 1E-05
 - 3) Individual cancer risks in column M don't exceed 1E-06.

Exposure Parameters

Parameter	Abbrev.	Noncancer	Cancer	Units
Average body weight	ABW	70	70	kg
Target risk	Risk	--	1E-06	unitless
Unit conversion factor	UCF	1,000	1,000	ug/mg
Hazard quotient	HQ	1	--	unitless
Averaging time	AT	25	75	yr
Breathing rate	BR	20	20	m3/day
Exposure duration	ED	25	25	yr
Exposure frequency	EF	0.26	0.26	unitless
Inhalation intake factor (Equations 1 and 2 above)	IIF	1.36E+04	4.09E-02	kg-ug-day/ mg-m3

Sources: MTCA Equations 750-1 and 750-2, Ecology's (2022) VI guidance

Calculating Exposure Frequency

Parameter	Abbrev.	Value	Units
Exposure time	ET	9	hr/day
Work days	WD	250	day/yr
Exposure freq. (Equation 8)	EF	2.57E-01	unitless

Noncancer Hazards and Cancer Risks for Air Sample

Sample ID: Indoor1-060425

Fraction or Component	Concentration Data				Toxicity Data			Cleanup Levels			Evaluating Compliance	
	Measured Concentration (ug/m3)	Measured Ambient Conc. (ug/m3)	Adjusted Concentration (ug/m3)	Proportion of TPH (percent)	RfDi (mg/kg-day)	CPF _i (risk per mg/kg-day)	ABS (unitless)	Noncancer CUL (ug/m3)	Cancer CUL (ug/m3)	Minimum CUL (ug/m3)	Noncancer Hazard (unitless)	Cancer Risk (unitless)
Aliphatics EC>5-8	120	30.25	8.98E+01	63.1%	1.71E+00	--	1	2.33E+04	--	2.33E+04	3.85E-03	--
Aliphatics EC>8-12	62	9.75	5.23E+01	36.8%	2.86E-02	--	1	3.90E+02	--	3.90E+02	1.34E-01	--
Aliphatics EC>12-16	0	0	0.00E+00	0.0%	2.86E-02	--	1	3.90E+02	--	3.90E+02	--	--
Aromatics EC>9-10 (note a)	0	0	0.00E+00	0.0%	1.14E-01	--	1	1.55E+03	--	1.55E+03	--	--
Aromatics EC>10-12	0	0	0.00E+00	0.0%	8.57E-04	--	1	1.17E+01	--	1.17E+01	--	--
Aromatics EC>12-16	0	0	0.00E+00	0.0%	1.14E-04	--	1	1.55E+00	--	1.55E+00	--	--
Benzene	0.27	0.13	1.40E-01	0.1%	8.57E-03	2.73E-02	1	1.17E+02	1.50E+00	1.50E+00	1.20E-03	9.35E-08
Ethylbenzene	0	0	0.00E+00	0.0%	2.86E-01	--	1	3.90E+03	--	3.90E+03	--	--
Toluene	0	0	0.00E+00	0.0%	1.43E+00	--	1	1.95E+04	--	1.95E+04	--	--
Total xylenes	0	0	0.00E+00	0.0%	2.86E-02	--	1	3.90E+02	--	3.90E+02	--	--
Naphthalene (note a)	0	0	0.00E+00	0.0%	8.57E-04	1.19E-01	1	1.17E+01	3.44E-01	3.44E-01	--	--
1,2-Dichlorethane (EDC)	0	0	0.00E+00	0.0%	2.00E-03	9.10E-02	1	2.73E+01	4.49E-01	4.49E-01	--	--
Ethylene dibromide (EDB)	0	0	0.00E+00	0.0%	2.57E-03	2.10E+00	1	3.50E+01	1.95E-02	1.95E-02	--	--
Methyl tert-butyl ether (MTBE)	0	0	0.00E+00	0.0%	8.57E-01	9.10E-04	1	1.17E+04	4.49E+01	4.49E+01	--	--
Total (sum of rows 28-41) (note b)	1.82E+02	4.01E+01	1.42E+02	100.0%	--	--	Total TPH:	1.02E+03	--	1.02E+03	0	9E-08
Source	Site-specific	Site-specific	Note a	--	Ecology (2022) App. E, CLARC	CLARC	Default	Equation 3 TPH: Equation 4	Equation 5	--	Equation 6 Note c	Equation 7 Note c

Noncancer Hazards and Cancer Risks for Air Sample

Sample ID: Indoor2-060425

Fraction or Component	Concentration Data				Toxicity Data			Cleanup Levels			Evaluating Compliance	
	Measured Concentration (ug/m3)	Measured Ambient Conc. (ug/m3)	Adjusted Concentration (ug/m3)	Proportion of TPH (percent)	RfDi (mg/kg-day)	CPFi (risk per mg/kg-day)	ABS (unitless)	Noncancer CUL (ug/m3)	Cancer CUL (ug/m3)	Minimum CUL (ug/m3)	Noncancer Hazard (unitless)	Cancer Risk (unitless)
Aliphatics EC>5-8	130	30.25	9.98E+01	70.2%	1.71E+00	--	1	2.33E+04	--	2.33E+04	4.28E-03	--
Aliphatics EC>8-12	150	9.75	1.40E+02	98.7%	2.86E-02	--	1	3.90E+02	--	3.90E+02	3.60E-01	--
Aliphatics EC>12-16	0	0	0.00E+00	0.0%	2.86E-02	--	1	3.90E+02	--	3.90E+02	--	--
Aromatics EC>9-10 (note a)	0	0	0.00E+00	0.0%	1.14E-01	--	1	1.55E+03	--	1.55E+03	--	--
Aromatics EC>10-12	0	0	0.00E+00	0.0%	8.57E-04	--	1	1.17E+01	--	1.17E+01	--	--
Aromatics EC>12-16	0	0	0.00E+00	0.0%	1.14E-04	--	1	1.55E+00	--	1.55E+00	--	--
Benzene	0.76	0.13	6.30E-01	0.4%	8.57E-03	2.73E-02	1	1.17E+02	1.50E+00	1.50E+00	5.39E-03	4.21E-07
Ethylbenzene	0	0	0.00E+00	0.0%	2.86E-01	--	1	3.90E+03	--	3.90E+03	--	--
Toluene	0	0	0.00E+00	0.0%	1.43E+00	--	1	1.95E+04	--	1.95E+04	--	--
Total xylenes	0	0	0.00E+00	0.0%	2.86E-02	--	1	3.90E+02	--	3.90E+02	--	--
Naphthalene (note a)	0	0	0.00E+00	0.0%	8.57E-04	1.19E-01	1	1.17E+01	3.44E-01	3.44E-01	--	--
1,2-Dichlorethane (EDC)	0	0	0.00E+00	0.0%	2.00E-03	9.10E-02	1	2.73E+01	4.49E-01	4.49E-01	--	--
Ethylene dibromide (EDB)	0	0	0.00E+00	0.0%	2.57E-03	2.10E+00	1	3.50E+01	1.95E-02	1.95E-02	--	--
Methyl tert-butyl ether (MTBE)	0	0	0.00E+00	0.0%	8.57E-01	9.10E-04	1	1.17E+04	4.49E+01	4.49E+01	--	--
Total (sum of rows 28-41) (note b)	2.81E+02	4.01E+01	2.41E+02	169.3%	--	--	Total TPH:	6.51E+02	--	6.51E+02	0	4E-07
Source	Site-specific	Site-specific	Note a	--	Ecology (2022) App. E, CLARC	CLARC	Default	Equation 3 TPH: Equation 4	Equation 5	--	Equation 6 Note c	Equation 7 Note c

Notes

a) The concentration of each fraction or component under Measured Ambient Conc. (column C) is subtracted from the corresponding concentration under Measured Site Concentration (column B) to correct for ambient background concentrations. In addition, the concentration of naphthalene is subtracted from the concentration of aromatics EC >9-10 to avoid double counting per Section E-6 of Ecology's (2022) vapor intrusion guidance. If the subtraction returns a negative result, it is adjusted up to zero. Ambient air samples must be collected consistent with Section 4.7 of Ecology's (2022) VI guidance and the ambient air adjustment must be approved by the Ecology site manager.

b) Total CUL (cells I42 and K42) is calculated for informational purposes but should not be used to evaluate other air samples because the compositions of other samples could be different. Total hazard index (purple cell K42) includes all fractions and components, assuming all have common target organs per WAC 173-340-750(3)(b)(ii)(C).

c) If the fraction or component was not analyzed or not detected on site, no hazard quotient or cancer risk appears in this column. If the fraction/component was detected on site but the ambient concentration was higher, a value of zero appears in this column.

Reference

Ecology. 2022. Guidance for Evaluating Vapor Intrusion in Washington State. Publ. no. 09-09-047.

Additional Abbreviations

-- - no value because parameter isn't relevant in this case
 ABS - inhalation absorption fraction
 CLARC - Cleanup Levels and Risk Calculation database
 CPFi - inhalation carcinogenic potency factor
 CUL - cleanup level
 EC - effective carbon chain length
 na - not analyzed
 RfDi - inhalation reference dose
 TPH - total petroleum hydrocarbons

Evaluating Compliance with Method C Air Cleanup Levels for Petroleum

Equations

- 1) Noncancer inhalation intake factor: $IIF = ABW \times UCF \times HQ \times AT / (BR \times ED \times EF)$
- 2) Cancer inhalation intake factor: $IIF = Risk \times ABW \times AT \times UCF / (BR \times ED \times EF)$
- 3) Noncancer cleanup level: $CUL = IIF \times RfDi / ABS$
- 4) TPH CUL = Total Adjusted Concentration (D43) / Total Noncancer Hazard (L43)
- 5) Cancer cleanup level: $CUL = IIF / (CPF_i \times ABS)$
- 6) Hazard Quotient = Adjusted Concentration / Noncancer CUL
- 7) Cancer Risk = Adjusted Concentration x 1E-6 / Cancer CUL

Instructions

Input measured concentrations in green cells B28-B41 and C28-C41. If the fraction/component was not detected in the sample but was detected elsewhere on site, enter half the detection limit. If the fraction/component wasn't analyzed or was never detected anywhere on site, enter 0 mg/kg.

Exposure Parameters

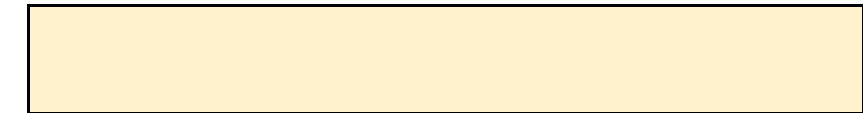
Parameter	Abbrev.	Noncancer	Cancer	Units
Average body weight	ABW	70	70	kg
Target risk	Risk	--	1E-06	unitless
Unit conversion factor	UCF	1,000	1,000	ug/mg
Hazard quotient	HQ	1	--	unitless
Averaging time	AT	6	75	yr
Breathing rate	BR	20	20	m3/day
Exposure duration	ED	6	30	yr
Exposure frequency	EF	1	1	unitless
Inhalation intake factor (Equations 1 and 2 above)	IIF	3.50E+03	8.75E-03	kg-ug-day/ mg-m3

Sources: MTCA Equations 750-1 and 750-2, WAC 173-340-750(4)

Results

Sample is in compliance if all of the following are true:

- 1) Hazard index in purple cell L42 doesn't exceed 1
- 2) Total cancer risk in purple cell M42 doesn't exceed 1E-05
- 3) Individual cancer risks in column M don't exceed 1E-05.



Noncancer Hazards and Cancer Risks for Air Sample

Sample ID: Indoor1-060425

Fraction or Component	Concentration Data				Toxicity Data			Cleanup Levels			Evaluating Compliance	
	Measured Concentration (ug/m3)	Measured Ambient Conc. (ug/m3)	Adjusted Concentration (ug/m3)	Proportion of TPH (percent)	RfDi (mg/kg-day)	CPF _i (risk per mg/kg-day)	ABS (unitless)	Noncancer CUL (ug/m3)	Cancer CUL (ug/m3)	Minimum CUL (ug/m3)	Noncancer Hazard (unitless)	Cancer Risk (unitless)
Aliphatics EC>5-8	120	30.25	8.98E+01	63.1%	1.71E+00	--	1	5.99E+03	--	5.99E+03	1.50E-02	--
Aliphatics EC>8-12	62	9.75	5.23E+01	36.8%	2.86E-02	--	1	1.00E+02	--	1.00E+02	5.22E-01	--
Aliphatics EC>12-16	0	0	0.00E+00	0.0%	2.86E-02	--	1	1.00E+02	--	1.00E+02	--	--
Aromatics EC>9-10 (note a)	0	0	0.00E+00	0.0%	1.14E-01	--	1	3.99E+02	--	3.99E+02	--	--
Aromatics EC>10-12	0	0	0.00E+00	0.0%	8.57E-04	--	1	3.00E+00	--	3.00E+00	--	--
Aromatics EC>12-16	0	0	0.00E+00	0.0%	1.14E-04	--	1	3.99E-01	--	3.99E-01	--	--
Benzene	0.27	0.13	1.40E-01	0.1%	8.57E-03	2.73E-02	1	3.00E+01	3.21E-01	3.21E-01	4.67E-03	4.37E-07
Ethylbenzene	0	0	0.00E+00	0.0%	2.86E-01	--	1	1.00E+03	--	1.00E+03	--	--
Toluene	0	0	0.00E+00	0.0%	1.43E+00	--	1	5.01E+03	--	5.01E+03	--	--
Total xylenes	0	0	0.00E+00	0.0%	2.86E-02	--	1	1.00E+02	--	1.00E+02	--	--
Naphthalene (note a)	0	0	0.00E+00	0.0%	8.57E-04	1.19E-01	1	3.00E+00	7.35E-02	7.35E-02	--	--
1,2-Dichloroethane (EDC)	0	0	0.00E+00	0.0%	2.00E-03	9.10E-02	1	7.00E+00	9.62E-02	9.62E-02	--	--
Ethylene dibromide (EDB)	0	0	0.00E+00	0.0%	2.57E-03	2.10E+00	1	9.00E+00	4.17E-03	4.17E-03	--	--
Methyl tert-butyl ether (MTBE)	0	0	0.00E+00	0.0%	8.57E-01	9.10E-04	1	3.00E+03	9.62E+00	9.62E+00	--	--
Total (sum of rows 28-41) (note b)	1.82E+02	4.01E+01	1.42E+02	100.0%	--	--	Total TPH:	2.62E+02	--	2.62E+02	1	4E-07
Source	Site-specific	Site-specific	Note a	--	Ecology (2022) App. E, CLARC	CLARC	Default	Equation 3 TPH: Equation 4	Equation 5	--	Equation 6 Note c	Equation 7 Note c

Noncancer Hazards and Cancer Risks for Air Sample

Sample ID: Indoor2-060425

Fraction or Component	Concentration Data				Toxicity Data			Cleanup Levels			Evaluating Compliance	
	Measured Concentration (ug/m3)	Measured Ambient Conc. (ug/m3)	Adjusted Concentration (ug/m3)	Proportion of TPH (percent)	RfDi (mg/kg-day)	CPFi (risk per mg/kg-day)	ABS (unitless)	Noncancer CUL (ug/m3)	Cancer CUL (ug/m3)	Minimum CUL (ug/m3)	Noncancer Hazard (unitless)	Cancer Risk (unitless)
Aliphatics EC>5-8	130	30.25	9.98E+01	70.2%	1.71E+00	--	1	5.99E+03	--	5.99E+03	1.67E-02	--
Aliphatics EC>8-12	150	9.75	1.40E+02	98.7%	2.86E-02	--	1	1.00E+02	--	1.00E+02	1.40E+00	--
Aliphatics EC>12-16	0	0	0.00E+00	0.0%	2.86E-02	--	1	1.00E+02	--	1.00E+02	--	--
Aromatics EC>9-10 (note a)	0	0	0.00E+00	0.0%	1.14E-01	--	1	3.99E+02	--	3.99E+02	--	--
Aromatics EC>10-12	0	0	0.00E+00	0.0%	8.57E-04	--	1	3.00E+00	--	3.00E+00	--	--
Aromatics EC>12-16	0	0	0.00E+00	0.0%	1.14E-04	--	1	3.99E-01	--	3.99E-01	--	--
Benzene	0.76	0.13	6.30E-01	0.4%	8.57E-03	2.73E-02	1	3.00E+01	3.21E-01	3.21E-01	2.10E-02	1.97E-06
Ethylbenzene	0	0	0.00E+00	0.0%	2.86E-01	--	1	1.00E+03	--	1.00E+03	--	--
Toluene	0	0	0.00E+00	0.0%	1.43E+00	--	1	5.01E+03	--	5.01E+03	--	--
Total xylenes	0	0	0.00E+00	0.0%	2.86E-02	--	1	1.00E+02	--	1.00E+02	--	--
Naphthalene (note a)	0	0	0.00E+00	0.0%	8.57E-04	1.19E-01	1	3.00E+00	7.35E-02	7.35E-02	--	--
1,2-Dichlorethane (EDC)	0	0	0.00E+00	0.0%	2.00E-03	9.10E-02	1	7.00E+00	9.62E-02	9.62E-02	--	--
Ethylene dibromide (EDB)	0	0	0.00E+00	0.0%	2.57E-03	2.10E+00	1	9.00E+00	4.17E-03	4.17E-03	--	--
Methyl tert-butyl ether (MTBE)	0	0	0.00E+00	0.0%	8.57E-01	9.10E-04	1	3.00E+03	9.62E+00	9.62E+00	--	--
Total (sum of rows 28-41) (note b)	2.81E+02	4.01E+01	2.41E+02	169.3%	--	--	Total TPH:	1.67E+02	--	1.67E+02	1	2E-06
Source	Site-specific	Site-specific	Note a	--	Ecology (2022) App. E, CLARC	CLARC	Default	Equation 3 TPH: Equation 4	Equation 5	--	Equation 6 Note c	Equation 7 Note c

Notes

a) The concentration of each fraction or component under Measured Ambient Conc. (column C) is subtracted from the corresponding concentration under Measured Site Concentration (column B) to correct for ambient background concentrations. In addition, the concentration of naphthalene is subtracted from the concentration of aromatics EC >9-10 to avoid double counting per Section E-6 of Ecology's (2022) vapor intrusion guidance. If the subtraction returns a negative result, it is adjusted up to zero. Ambient air samples must be collected consistent with Section 4.7 of Ecology's (2022) VI guidance and the ambient air adjustment must be approved by the Ecology site manager.

b) Total CUL (cells I42 and K42) is calculated for informational purposes but should not be used to evaluate other air samples because the compositions of other samples could be different. Total hazard index (purple cell K42) includes all fractions and components, assuming all have common target organs per WAC 173-340-750(3)(b)(ii)(C).

c) If the fraction or component was not analyzed or not detected on site, no hazard quotient or cancer risk appears in this column. If the fraction/component was detected on site but the ambient concentration was higher, a value of zero appears in this column.

Reference

Ecology. 2022. Guidance for Evaluating Vapor Intrusion in Washington State. Publ. no. 09-09-047.

Additional Abbreviations

-- - no value because parameter isn't relevant in this case
 ABS - inhalation absorption fraction
 CLARC - Cleanup Levels and Risk Calculation database
 CPFi - inhalation carcinogenic potency factor
 CUL - cleanup level
 EC - effective carbon chain length
 na - not analyzed
 RfDi - inhalation reference dose
 TPH - total petroleum hydrocarbons