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#### Transmitted via Electronic Mail

April 15, 2024

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

RE: Quarterly Progress Report: January 1 through March 31, 2024
Time Oil Bulk Terminal Site, Cleanup Site ID #14604

Prospective Purchaser Consent Decree No. 20-2-15215-3 SEA

Dear Ms. Seeds:

Pioneer Engineering & Environmental Services, LLC on behalf of TOC Seattle Terminal 1, LLC submits the attached Quarterly Progress Report for the Time Oil Bulk Terminal Site per Section XII of the Prospective Purchaser Consent Decree between the Washington State Department of Ecology and TOC Seattle Terminal 1, LLC. The quarterly progress report consists of a brief narrative summary of notable activities that occurred during the reporting period and that are anticipated for the upcoming reporting period.

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

Sincerely,

Kim Hempel

Project Coordinator

Pioneer Engineering & Environmental Services, LLC

Distribution List:

Doug Ciserella and Mike Ciserella, TOC Seattle Terminal 1, LLC Bill Joyce, 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 QUARTERLY PROGRESS REPORT: JANUARY 1 THROUGH MARCH 31, 2024

This report has been prepared in accordance with the requirements of the Time Oil Bulk Terminal Site Prospective Purchaser Consent Decree (PPCD) between the Washington State Department of Ecology (Ecology) and TOC Seattle Terminal 1, LLC. This progress report provides details on the following: 1) all on site activities; 2) any deviations from required tasks; 3) anticipated problems in meeting schedule or objectives and associated solutions 4) sampling, testing, or other data received; 5) work planned for the upcoming 3-month period; and, 6) deliverables planned for the upcoming 3-month period.

#### Summary of On-Site Activities Performed During the Reporting Period (PPCD Section XII.A)

- A visual check of the site was conducted on February 8 and February 26, 2024. Construction associated with redevelopment continues on Parcel F, and all interim surfaces on remaining portions of the Site remain in good condition and no other concerns were noted during the site visits.
- A licensed driller from Anderson Environmental Contracting, LLC (AEC), with oversight by a Floyd|Snider (F|S) geologist, installed two new replacement monitoring wells (01MW58R and 01MW53R) on February 8, 2024 and decommissioned monitoring wells (01MW53, 01MW58, 01MW88, 01MW103, 01MW109, 02MW05, 02MW08, 02MW09, 02MW10, 02MW13, and 02MW22) on February 9, 2024, as approved by Ecology in an email dated February 4, 2024. A soil boring to visually assess the distribution of PlumeStop in the in-situ treatment barrier upgradient of 01MW85 was also advanced during this field mobilization.
- F|S personnel collected the fifth round of post-remediation groundwater samples on February 26 and 27, 2024 (Q1 2024) per the approved Groundwater Monitoring Plan (GMP) and additional Ecology email concurrence dated January 31, 2024. Monitoring included continued groundwater collection at contingency well 01MW107 and additional sampling at 01MW89 based on elevated indicator hazardous substances (IHSs) at 01MW53 and/or 01MW85 in 2023.
- Water samples were collected from the ASKO Property permeable reactive barrier vault and gravity well on February 26, 2024 for operation and maintenance (O&M) assessment purposes. The O&M data were collected to coincide with remedial investigation groundwater sampling being performed by BNSF's consultant on the upgradient BNSF Property. O&M assessment will continue in Q2 2024 per Ecology's request.

#### **Deliverables**

Deliverables during this reporting period included the following:

- Groundwater sampling results for the fourth quarter of 2023 and associated contour maps were submitted to Ecology via email on January 4, 2024.
- The Quarterly Progress Report for the fourth quarter of 2023 was submitted to Ecology on January 10, 2024.
- The Long-Term Compliance Monitoring Annual Report for 2023 activities was submitted to Ecology on March 1, 2024, and Ecology subsequently provided comments via email on March 5, 2024. F|S requested clarification on Ecology comments via email on March 7, 2024 and Ecology responded via email on March 11, 2024.
- Per Ecology's request, groundwater and O&M sampling results were submitted to BNSF and Ecology via email on March 19, 2024 to facilitate evaluation of TCE and cVOCs in the vicinity of the BNSF/ASKO property boundary.

#### **Deviations from Required Tasks (PPCD Section XII.B)**

None.

# Anticipated Problems in Meeting Schedule or Objectives and Associated Solutions (PPCD Section XII.C and XII.D)

- TCE and associated cVOC contaminant concentrations originating from the upgradient BNSF property were recently identified in upgradient groundwater as part of the BNSF remedial investigation at levels considerably higher than those observed in the 2019 remedial investigation for the Time Oil Bulk Terminal Site. The elevated TCE and cVOC concentrations in groundwater on BNSF are impacting the shallow water bearing zone (WBZ) in groundwater wells on the downgradient ASKO parcel owned by TOC Seattle Terminal 1, LLC. These impacts, if they continue, represent an on-going source to groundwater and may affect achievement of the cleanup levels (CULs) at the conditional point of compliance (CPOC) within the predicted 15-year restoration timeframe.
- Aside from the item above, there are no other anticipated problems in meeting the schedule of deliverables specified in Exhibit D of the PPCD. The schedule of deliverables and activities specified in Table 8.1 of the Cleanup Action Plan (Exhibit C of the PPCD) are currently on track or ahead of schedule.

#### Raw Data Received (PPCD Section XII.E)

- Groundwater sampling results for the 1<sup>st</sup> Quarter 2024 were received from Friedman & Bruya, Inc. on March 12, 2024. Results were received in one sample delivery group (F&BI 402383);
- Samples collected for O&M purposes from the ASKO property permeable reactive barrier vault and gravity well were received on March 6, 2024. Results were received in one sample delivery group (F&BI 402385); and
- Copies of the laboratory reports discussed herein are provided as an attachment to this Progress Report.

#### Work Planned During the Upcoming Reporting Period (PPCD Section XII.F)

The following work is planned for the 2<sup>nd</sup> Quarter 2024:

- Sixth round of groundwater sampling; surveying of new wells 01MW53R, 01MW58R, and top of casing for the gravity well; and site-wide synoptic gauging in coordination with BNSF is scheduled for May 15, 2024;
- Review of BNSF 1<sup>st</sup> Quarter 2024 water levels and groundwater results;
- Construction on Lot F continues; and
- Site checks will be conducted periodically on all interim surfaces outside of Lot F to ensure that conditions remain stable during the interim period prior to site development.

#### Deliverables Planned During the Upcoming Reporting Period (PPCD Section XII.G)

The following deliverables are anticipated to be completed during the next quarterly reporting period of April through June 2024:

- Transmittal of a summary of 1<sup>st</sup> Quarter 2024 groundwater sampling results and associated groundwater contour maps to Ecology via email;
- Submittal of the Quarterly Progress Report for the 1<sup>st</sup> Quarter 2024; and
- Submittal of updated Financial Assurance costs to Ecology per the PPCD.

## Other Pertinent Information, Including Changes in Key Personnel

• None.

#### **Attachments**

• Attachment 1 – Laboratory Analytical Reports

**END QUARTERLY PROGRESS REPORT** 

## **ATTACHMENT 1**

**Laboratory Analytical Reports** 

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S.

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

March 12, 2024

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 February 27, 2024 from the Cantera TOC, F&BI 402383 project. There are 44 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

FDS0312R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2024 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera TOC, F&BI 402383 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Floyd-Snider
402383 -01	01MW108-022624
402383 -02	01MW12-022624
402383 -03	01MW56-022624
402383 -04	01MW40-022624
402383 -05	01MW46-022624
402383 -06	01MW66-022624
402383 -07	01MW58R-022624
402383 -08	01MW15-022624
402383 -09	01MW19R-022624
402383 -10	01MW49R-022624
402383 -11	01MW84-022624
402383 -12	01MW107-022624
402383 -13	MW05-022724
402383 -14	MW06-022724
402383 -15	01MW89-022724
402383 -16	01MW53R-022724
402383 -17	01MW85-022724
402383 -18	02MW19-022724
402383 -19	02MW07-022724
402383 -20	02MW04R-022724
402383 -21	02MW04R-D-022724
402383 -22	Trip Blank

Samples MW05-022724, MW06-022724, and 01MW85-022724 were sent to Onsite Environmental for dissolved gases analysis. The report is enclosed.

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

Date Extracted: 03/04/24 Date Analyzed: 03/04/24

# RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
01MW12-022624 402383-02	<100	104
01MW40-022624 402383-04	110	93
01MW19R-022624 402383-09	560	107
01MW49R-022624 402383-10	<100	95
01MW84-022624 402383-11 1/5	1,800	108
02MW19-022724 402383-18	<100	94
02MW07-022724 402383-19	<100	99
02MW04R-022724 402383-20	<100	94
02MW04R-D-022724 402383-21	<100	98
Method Blank 04-431 MB	<100	96

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

Date Extracted: 02/29/24 Date Analyzed: 02/29/24

# RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25} ext{)}}$	$rac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36})}$	Surrogate (% Recovery) (Limit 50-150)
01MW12-022624 402383-02	550 x	<250	92
01MW40-022624 402383-04	5,000 x	530 x	112
01MW19R-022624 402383-09	600 x	<250	104
$\underset{402383\text{-}10}{01MW49R-022624}$	200 x	<250	114
01MW84-022624 402383-11	540 x	<250	93
02MW19-022724 402383-18	110 x	<250	104
02MW07-022724 402383-19	<50	<250	99
02MW04R-022724 402383-20	<50	<250	104
02MW04R-D-022724 402383-21	<50	<250	100
Method Blank 04-480 MB	<50	<250	94

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Dissolved Metals By EPA Method 6020B

Client ID: MW05-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

 Date Extracted:
 02/28/24
 Lab ID:
 402383-13 x10

 Date Analyzed:
 02/29/24
 Data File:
 402383-13 x10.046

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$ 

Concentration

Analyte: ug/L (ppb)

Iron 2,000

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Dissolved Metals By EPA Method 6020B

Client ID: MW06-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

Date Extracted: 02/28/24 Lab ID: 402383-14 x10
Date Analyzed: 02/29/24 Data File: 402383-14 x10.047

 $\begin{array}{cccc} \text{Matrix:} & \text{Water} & \text{Instrument:} & \text{ICPMS2} \\ \text{Units:} & \text{ug/L (ppb)} & \text{Operator:} & \text{SP} \end{array}$ 

Concentration

Analyte: ug/L (ppb)

Iron 6,900

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Dissolved Metals By EPA Method 6020B

Client ID: 01MW85-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

Date Extracted: 02/28/24 Lab ID: 402383-17 x10
Date Analyzed: 02/29/24 Data File: 402383-17 x10.048

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 4,300

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Method Blank Client: Floyd-Snider

Date Received: NA Project: Cantera TOC, F&BI 402383

Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron <50

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: MW05-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

 Date Extracted:
 02/28/24
 Lab ID:
 402383-13 x10

 Date Analyzed:
 02/29/24
 Data File:
 402383-13 x10.066

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 2,200

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: MW06-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

Date Extracted: 02/28/24 Lab ID: 402383-14 x10
Date Analyzed: 02/29/24 Data File: 402383-14 x10.067

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 7,200

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 6020B

Client ID: 01MW85-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

Date Extracted: 02/28/24 Lab ID: 402383-17 x10
Date Analyzed: 02/29/24 Data File: 402383-17 x10.068

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Iron 4,300

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: 02MW19-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Arsenic 4.8

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: 02MW07-022724 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

 Date Extracted:
 02/28/24
 Lab ID:
 402383-19

 Date Analyzed:
 02/28/24
 Data File:
 402383-19.166

 Matrix:
 Water
 Instrument:
 ICPMS2

Units: ug/L (ppb) Operator: SP

Concentration ug/L (ppb)

Arsenic <1

Analyte:

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Floyd-Snider

Date Received: NA Project: Cantera TOC, F&BI 402383

02/28/24 Lab ID: Date Extracted: I4-154 mb Date Analyzed: 02/28/24 Data File: I4-154 mb.113 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) SPOperator:

Concentration

Analyte: ug/L (ppb)

 $\begin{array}{ll} \text{Arsenic} & <1 \\ \text{Iron} & <50 \\ \end{array}$ 

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW108-022624	Client:	Floyd-Snider
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Date Received: Cantera TOC, F&BI 402383 02/27/24 Project: Lab ID: Date Extracted: 402383-01 03/01/24 Date Analyzed: 03/01/24 Data File: 030120.DMatrix: Water Instrument: GCMS11 ug/L (ppb) Units: Operator: MD

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

#### Concentration

Compounds: ug/L (ppb)

Vinyl chloride 0.11 cis-1,2-Dichloroethene <1 Trichloroethene <0.5

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 01MW12-022624	Client:	Floyd-Snider
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Project: Cantera TOC, F&BI 402383 Date Received: 02/27/24Lab ID: Date Extracted: 03/01/24 402383-02 Date Analyzed: 03/01/24 Data File: 030121.DMatrix: Instrument: Water GCMS11 Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	101	72	130

Concentration

Compounds: ug/L (ppb)

Benzene <0.35

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW56-022624	Client:	Floyd-Snider
Date Received:	02/27/24	Project:	Cantera TOC, F&BI 402383
Date Extracted:	03/01/24	Lab ID:	402383-03
Date Analyzed:	03/01/24	Data File:	030132.D
Motrix	Water	Instrument	CCMS11

Matrix: Water Instrument: GCMS11
Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	92	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	104	72	130

2.1

Concentration
ug/L (ppb)

Vinyl chloride
cis-1,2-Dichloroethene

104

Concentration
ug/L (ppb)

1.1
<1

Trichloroethene

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW40-022624	Client:	Floyd-Snider
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 Date Received:
 02/27/24
 Project:
 Cantera TOC, F&BI 402383

 Date Extracted:
 03/01/24
 Lab ID:
 402383-04

 Date Analyzed:
 03/01/24
 Data File:
 030130.D

 Matrix:
 Water
 Instrument:
 GCMS11

Units: ug/L (ppb) Operator: MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	101	72	130

Concentration

Compounds: ug/L (ppb)

Benzene 1.6

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW46-022624	Client:	Floyd-Snider
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Date Received: Cantera TOC, F&BI 402383 Project: 02/27/24 Lab ID: Date Extracted: 03/01/24 402383-05 Date Analyzed: 03/01/24 Data File: 030138.DMatrix: Instrument: GCMS11Water Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	99	72	130

Concentration

Compounds: ug/L (ppb)

Vinyl chloride 69 Benzene 3.1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW46-022624	Client:	Floyd-Snider
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 Date Received:
 02/27/24
 Project:
 Cantera TOC, F&BI 402383

 Date Extracted:
 03/01/24
 Lab ID:
 402383-05 1/10

 Date Analyzed:
 03/04/24
 Data File:
 030428.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	104	72	130

Concentration

Compounds: ug/L (ppb)

cis-1,2-Dichloroethene 520 Trichloroethene 220

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW58R-022624	Client:	Floyd-Snider

Cantera TOC, F&BI 402383 Date Received: 02/27/24Project: Lab ID: 402383-07 1/10 Date Extracted: 03/01/24 Date Analyzed: 03/01/24 Data File: 030134.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

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

#### Concentration

Compounds: ug/L (ppb)

Vinyl chloride 31 cis-1,2-Dichloroethene 520 Trichloroethene 40

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW15-022624	Client:	Floyd-Snider
Date Received:	02/27/24	Project:	Cantera TOC, F&BI 402383
Date Extracted:	03/01/24	Lab ID:	402383-08
Date Analyzed:	03/01/24	Data File:	030137.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	89	78	126
Toluene-d8	108	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	59
cis-1,2-Dichloroethene	88
Trichloroethene	27

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 01MW19R-022624	Client:	Floyd-Snider
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Project: Cantera TOC, F&BI 402383 Date Received: 02/27/24Lab ID: Date Extracted: 03/01/24 402383-09 Date Analyzed: 03/01/24 Data File: 030131.DMatrix: Instrument: Water GCMS11 Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	103	72	130

Concentration

Compounds: ug/L (ppb)

Benzene 1.9

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 01MW49R-022	2624 Client:	Floyd-Snider
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Project: Cantera TOC, F&BI 402383 Date Received: 02/27/24Lab ID: Date Extracted: 03/01/24 402383-10 Date Analyzed: 03/01/24 Data File: 030122.DMatrix: Instrument: Water GCMS11 Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	101	72	130

Concentration

Compounds: ug/L (ppb)

Benzene <0.35

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 01MW84-022624 Client: Floyd-Snider

 Date Received:
 02/27/24
 Project:
 Cantera TOC, F&BI 402383

 Date Extracted:
 03/01/24
 Lab ID:
 402383-11

Date Analyzed: 03/01/24 Data File: 030123.D Matrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

Upper Lower Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 105 78 126 Toluene-d8 105 84 115 4-Bromofluorobenzene 104 72 130

Concentration

Compounds: ug/L (ppb)

Benzene <0.35

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 01MW107-022624	Client:	Floyd-Snider
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Cantera TOC, F&BI 402383 Date Received: 02/27/24Project: Lab ID: Date Extracted: 402383-12 03/01/24 Date Analyzed: 03/01/24 Data File: 030124.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	100	72	130

#### Concentration

Compounds: ug/L (ppb)

Vinyl chloride <0.02
cis-1,2-Dichloroethene <1
Trichloroethene <0.5

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: Date Received: Date Extracted:	MW05-022724 02/27/24 03/01/24	Client: Project: Lab ID:	Floyd-Snider Cantera TOC, F&BI 402383 402383-13 1/10
Date Extracted.  Date Analyzed:  Matrix:	03/01/24 03/01/24 Water	Data File: Instrument:	030136.D GCMS11
Units:	ug/L (ppb)	Operator:	MD

		Lower	$\cup$ pper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	99	72	130

4 Diomondologenzene	00
Compounds:	Concentration ug/L (ppb)
Vinyl chloride	24
cis-1,2-Dichloroethene	840
Trichloroethene	120
Benzene	1.1 j

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW06-022724	Client:	Floyd-Snider
Date Received:	02/27/24	Project:	Cantera TOC, F&BI 402383
Date Extracted:	03/01/24	Lab ID:	402383-14
Date Analyzed:	03/01/24	Data File:	030135.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

		Lower	Opper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.5
cis-1,2-Dichloroethene	68
Trichloroethene	7.7
Benzene	< 0.35

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW89-022724	Client:	Floyd-Snider
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Date Received: Cantera TOC, F&BI 402383 02/27/24 Project: Lab ID: Date Extracted: 402383-15 03/01/24 Date Analyzed: 03/01/24 Data File: 030125.DMatrix: Water Instrument: GCMS11 ug/L (ppb) Units: Operator: MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	94	72	130

#### Concentration

< 0.5

Compounds: ug/L (ppb)

Vinyl chloride <0.02
cis-1,2-Dichloroethene <1

Trichloroethene

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW53R-022724	Client:	Floyd-Snider
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Project: Cantera TOC, F&BI 402383 Date Received: 02/27/24Lab ID: Date Extracted: 03/01/24 402383-16 Date Analyzed: 03/01/24 Data File: 030133.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) MDOperator:

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	90	84	115
4-Bromofluorobenzene	97	72	130

#### Concentration

Compounds:	ug/L (ppb)
Vinyl chloride	0.60
cis-1,2-Dichloroethene	2.9
Trichloroethene	26

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW85-022724	Client:	Floyd-Snider
Date Received:	02/27/24	Project:	Cantera TOC, F&BI 402383
Date Extracted:	03/01/24	Lab ID:	402383-17 1/10
Date Analyzed:	03/01/24	Data File:	030134.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	93	71	132
Toluene-d8	96	68	139
4-Bromofluorobenzene	110	62	136

4-Dromonuorobenzene	110
Compounds:	Concentration ug/L (ppb)
Vinyl chloride	28
cis-1,2-Dichloroethene	990
Trichloroethene	<5

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 02MW19-022724 Client: Floyd-Snider

 Date Received:
 02/27/24
 Project:
 Cantera TOC, F&BI 402383

 Date Extracted:
 03/01/24
 Lab ID:
 402383-18

Date Analyzed: 03/01/24 Data File: 030126.D Matrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

Upper Lower Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 92 78 126 Toluene-d8 102 84 115 4-Bromofluorobenzene 103 72 130

Concentration

Compounds: ug/L (ppb)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 02MW07-022724 Client: Floyd-Snider

 Date Received:
 02/27/24
 Project:
 Cantera TOC, F&BI 402383

 Date Extracted:
 03/01/24
 Lab ID:
 402383-19

Date Analyzed: 03/01/24 Data File: 030129.D Matrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

Upper Lower Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 92 78 126 Toluene-d8 103 84 115 4-Bromofluorobenzene 107 72 130

Concentration

Compounds: ug/L (ppb)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: 02MW04R-022	Client:	Floyd-Snider
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Cantera TOC, F&BI 402383 Date Received: 02/27/24Project: Lab ID: Date Extracted: 402383-20 03/01/24 Date Analyzed: 03/01/24 Data File:  $030127.\mathrm{D}$ Matrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

Surmorator	0/ Pagayawy	Lower Limit:	Upper Limit:
Surrogates:	% Recovery:	Lillill.	Lillill.
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	97	72	130

Concentration

Compounds: ug/L (ppb)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Project: Cantera TOC, F&BI 402383 Date Received: 02/27/24Lab ID: 402383-21 Date Extracted: 03/01/24 Date Analyzed: 03/01/24 Data File: 030128.DMatrix: Instrument: Water GCMS11 Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	105	72	130

Concentration

Compounds: ug/L (ppb)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider

Cantera TOC, F&BI 402383 Date Received: Not Applicable Project: Lab ID: 03/01/24 04-0406 mbDate Extracted: Date Analyzed: 03/01/24 Data File: 030119.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	101	72	130

#### Concentration

Compounds: ug/L (ppb)
Vinyl chloride <0.02

cis-1,2-Dichloroethene <1
Trichloroethene <0.5
Benzene <0.1 j

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis for Semivolatile Phenols By EPA Method 8270E SIM

Client Sample ID: 01MW66-022624 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402383

Lab ID: Date Extracted: 02/29/24 402383-06 Date Analyzed: 02/29/24 Data File: 022922.DMatrix: Water Instrument: GCMS9 Units: ug/L (ppb) Operator: VM

Upper Limit: 150 Lower Surrogates: 2,4,6-Tribromophenol % Recovery: Limit:

118 50

Concentration Compounds: ug/L (ppb) Pentachlorophenol 0.76

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis for Semivolatile Phenols By EPA Method 8270E SIM

Client Sample ID: Method Blank Client: Floyd-Snider

Date Received: Not Applicable Project: Cantera TOC, F&BI 402383

Lab ID: Date Extracted: 02/29/24 04-0481 mb Date Analyzed: 02/29/24 Data File: 022921.DMatrix: Water Instrument: GCMS9 Units: ug/L (ppb) Operator: VM

Surrogates: % Recovery: Lower Lower Limit: Limit: 2,4,6-Tribromophenol 70 50 150

Concentration

Compounds: ug/L (ppb)

Pentachlorophenol <0.2

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

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

Laboratory Code: 402383-21 (Duplicate)

	Reporting	Sample	Duplicate	$\operatorname{RPD}$
Analyte	Units	Result	Result	(Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Gasoline	ug/L (ppb)	1,000	100	70-130	

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

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

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	104	72-139	4

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 402395-01 x10 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron	ug/L (ppb)	100	63,000	0 b	0 b	75-125	nm

			$\operatorname{Percent}$	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	92	80-120

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

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

Laboratory Code: 402378-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	<1	93	92	75-125	1
Iron	ug/L (ppb)	100	156	88 b	85 b	75 - 125	3 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	92	80-120
Iron	ug/L (ppb)	100	97	80-120

#### ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

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

Laboratory Code: 402383-04 (Matrix Spike)

				Percent	
	Reporting	Spike	Sample	Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Vinyl chloride	ug/L (ppb)	10	0.39	107	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	2.7	104 b	10-211
Trichloroethene	ug/L (ppb)	10	8.3	101 b	35-149
Benzene	ug/L (ppb)	10	1.6	105	50-150

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	ug/L (ppb)	10	114	115	64-142	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	110	112	70-130	2
Trichloroethene	ug/L (ppb)	10	99	98	70-130	1
Benzene	ug/L (ppb)	10	103	104	70-130	1

#### ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402383

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILE PHENOLS BY EPA METHOD 8270E SIM

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 30)
Pentachlorophenol	ug/L (ppb)	2.5	71	89	70-130	22

#### **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 below the standard reporting limit. 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.

Report To Kristin Anderson, Panella Ostantos

+ Lab Data & Floyd suder com

Company Floyd Sander

Address 601 Union St., Suite 600 01 MW SW -022624 03 A & 01 MW 12 - 022624 01MW66-022624 01MW40-022624 09 A-6 City, State, ZIP Seattle, WA 1810 01 MW46-022624 05A-P 01MW108-022624 Phone 2012 - 2078 01 MW19 R - 022624 01 MW 15 -022624 01 MWS&R-022624 07 AC 01MW49R-022624 10 402383 Ph. (206) 285-8282 Friedman & Bruya, Inc. Sample ID \_Email Relinquished by: Ton Ma & Man Received by: Received by: Relinquished by: DIAC 02 A-6 08 A X 09 A6 06 Lab ID SIGNATURE 220 24 Sampled Date 10:10 SAMPLE CHAIN OF CUSTODY 12:15 40:01 2000 H:05 11:30 91:10 15:22 10:07 12:19 Sampled Project sname, no and viny ich land Time CVOCS include: TCE, PROJECT NAME SAMPLERS (signature) Cantera TOC Parrolle brothshor B Sample Type NAHOHAN 6 N 4 S N PRINT NAME NWTPH-Dx NWTPH-Gx BTEX EPA 802 Pioneer NWTPH-HCID INVOICE TO ANALYSES REQUESTED X. VOCs EPA 8260 PO# PAHs EPA 8270 Samples received PCBs EPA 8082 F15 F85 COMPANY Pentachbaphenel ☐ Archive samples XStandard turnaround Rush charges authorized by: Default: Dispose after 30 days RUSH TURNAROUND TIME SAMPLE DISPOSAL nr/48/20 2/27/24 DATE Notes 14:55 14:55 TIME

DI MWS3R-02274 MWD6-022724 MW65-022724 01MW107-022624 Phone City, State, ZIP. Company Floyd Micher Report To Kushn, Ramela + Lab Data Address 62MW 19-022724 01 MW 82-072724 440 01 MWB9-022724 02MW 04R-022724 | 20 R-6 02MW07-0227724 01 MW 84-022624 Friedman & Bruya, Inc. Ph. (206) 285-8282 402383 Sample ID Email Relinquished by: Prof 4 Hollar Relinquished by: Received by: Received by: 15 A-V 282 11 A-6 13 A c - V h, Ê 18 ArH 17 13-19 Lab ID A SIGNATURE たなに 2/24/24 Sampled Date SAMPLE CHAIN OF CUSTODY 5h: 80 10:25 12.45 OB:46 6:15 0.10 20:52 130 Sampled SAMPLERS (signature) Time PROJECT NAME SWO CHES CALLY TO ONSHE Cantera - TOC 33 Sample F E Z E Z Z F E GIN Vancolle Gallahar RLs? - Yes / No ANHPHAN Jars # of W N PRINT NAME يى NWTPH-Dx BTEX EPA 8021 Pioneer INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PO# Samples received F/S F8B COMPANY Benzene Total in × WUN Standard turnaround ☐ Archive samples Rush charges authorized by: Default: Dispose after 30 days TURNAROUND TIME SAMPLE DISPOSAL

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DATE

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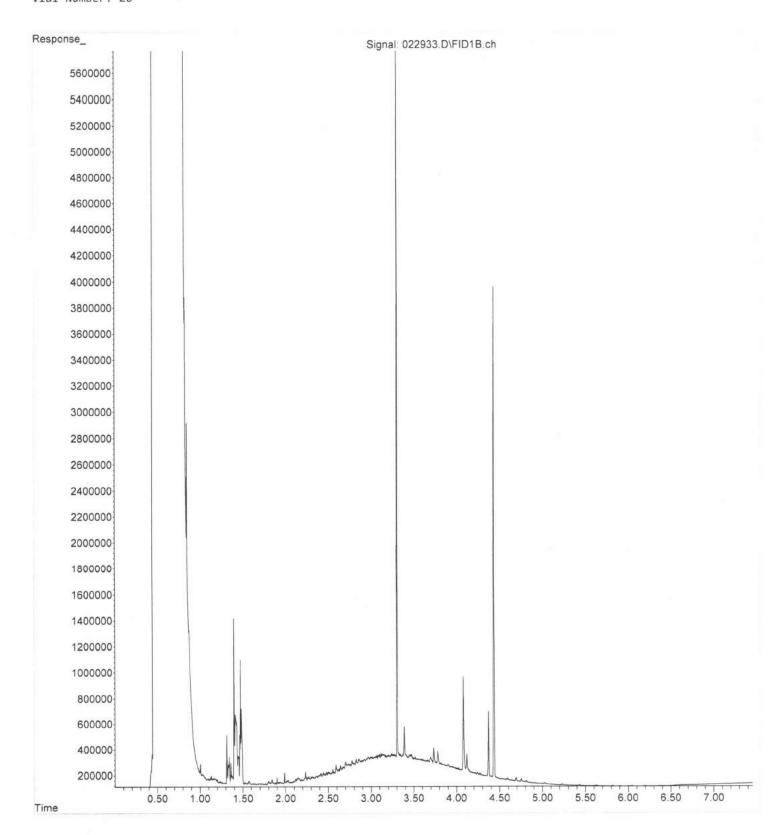
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File :P:\Proc\_GC10\02-29-24\022933.D

Operator : IJL

Acquired : 29 Feb 2024 02:37 pm using AcqMethod DX.M

Instrument: GC10
Sample Name: 402303-02
Misc Info: GR3
Vial Number: 26



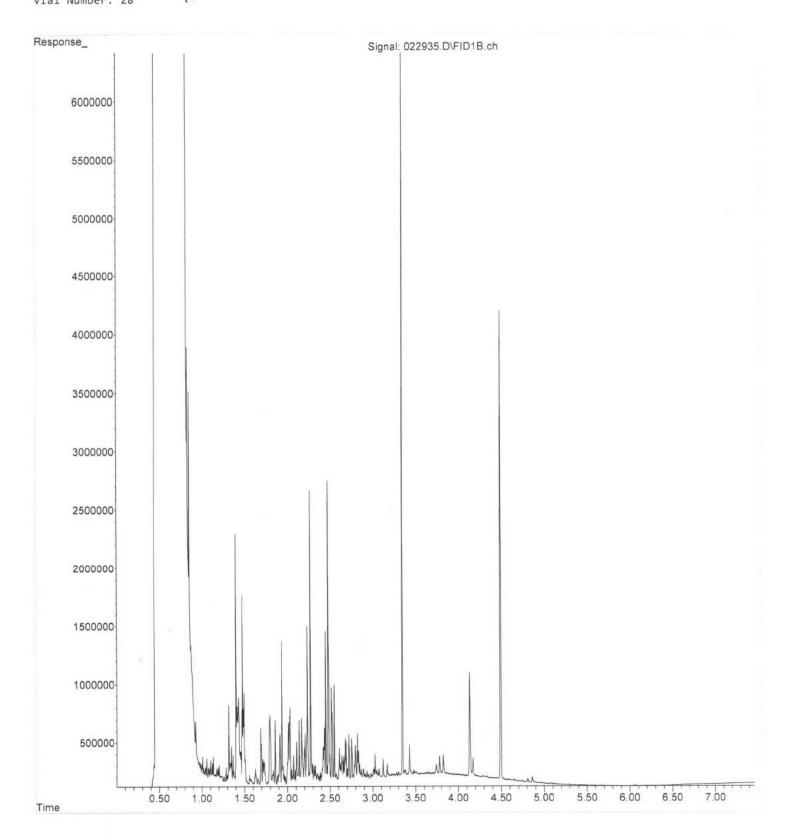
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Operator : IJL

Acquired : 29 Feb 2024 03:00 pm using AcqMethod DX.M

Instrument : GC10 Sample Name: 402303-09 Misc Info : Vial Number: 28

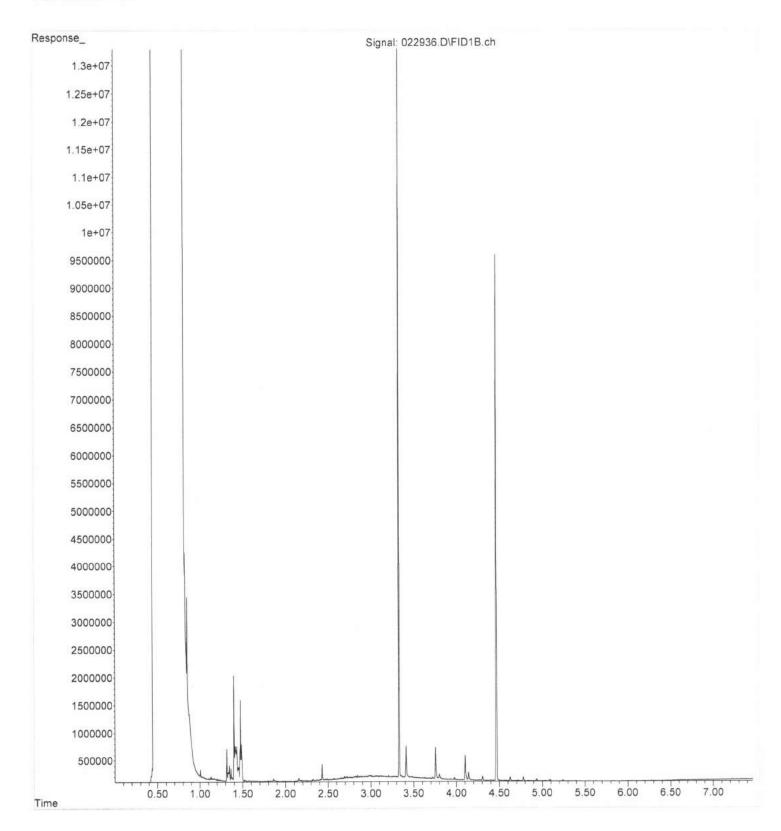


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Operator : IJL

Acquired : 29 Feb 2024 03:11 pm using AcqMethod DX.M

Instrument : GC10
Sample Name: 4023 \$ 3-10
Misc Info : \$ \text{Kin}

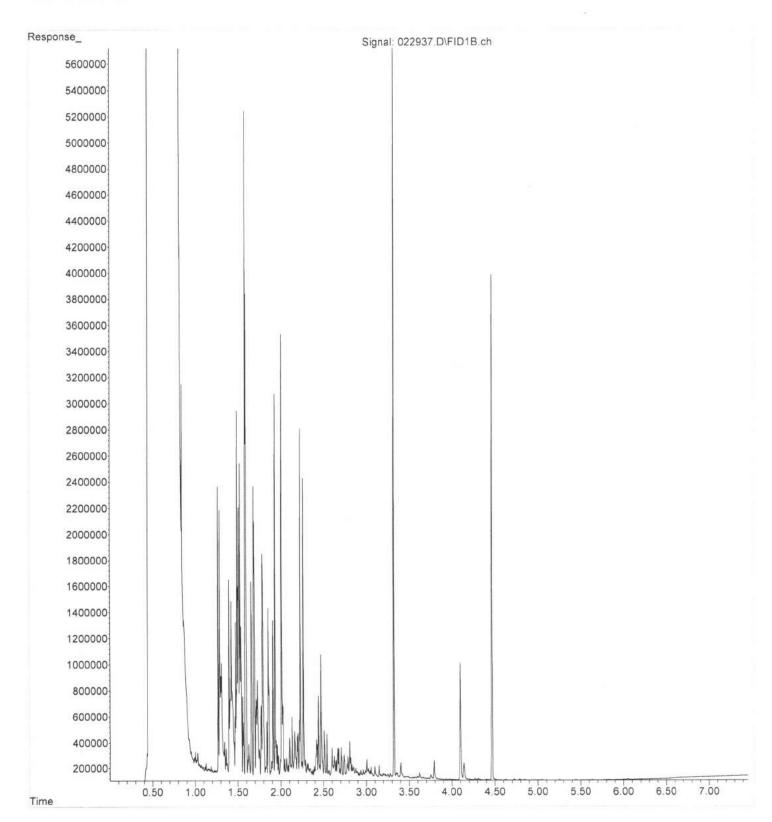


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Operator : IJL

Acquired : 29 Feb 2024 03:23 pm using AcqMethod DX.M

Instrument: GC10 Sample Name: 402303-11 Misc Info: % NO

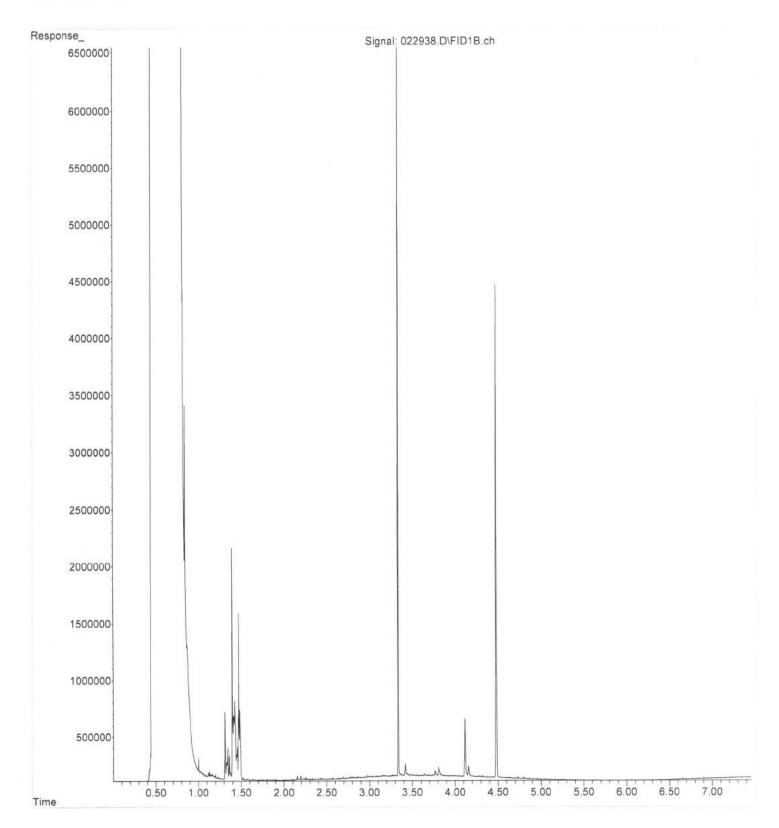


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Operator : IJL

Acquired : 29 Feb 2024 03:34 pm using AcqMethod DX.M

Instrument: GC10
Sample Name: 4023 \$\psi\_3 - 18
Misc Info: \$\psi\_4 \lambda \la

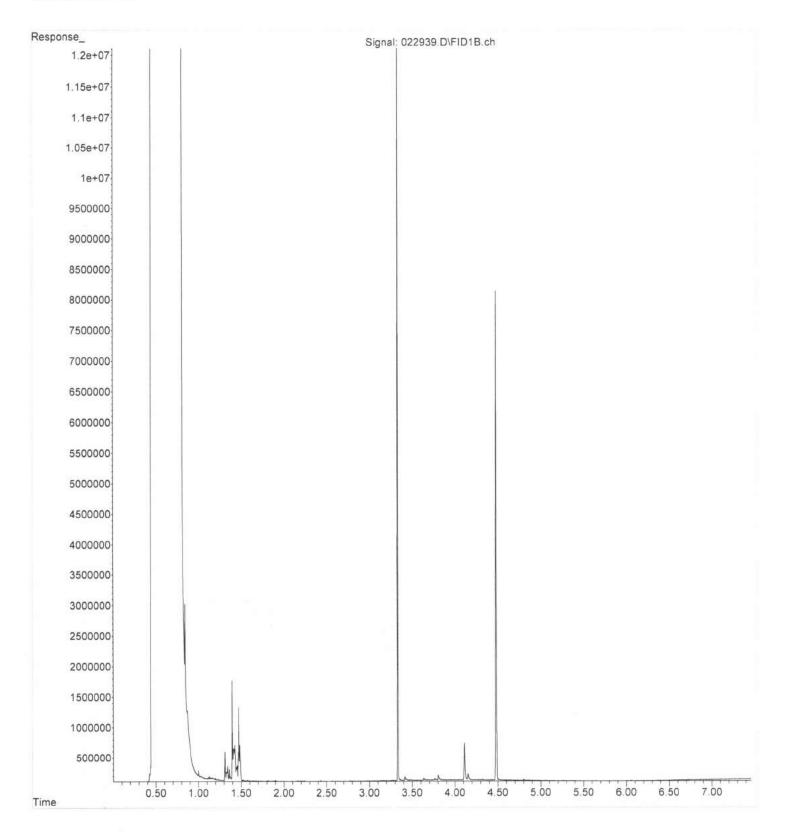


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Operator : IJL

Acquired : 29 Feb 2024 03:46 pm using AcqMethod DX.M

Instrument : GC10 Sample Name: 4023∲3-19 Misc Info : ₹₹₹₹₹

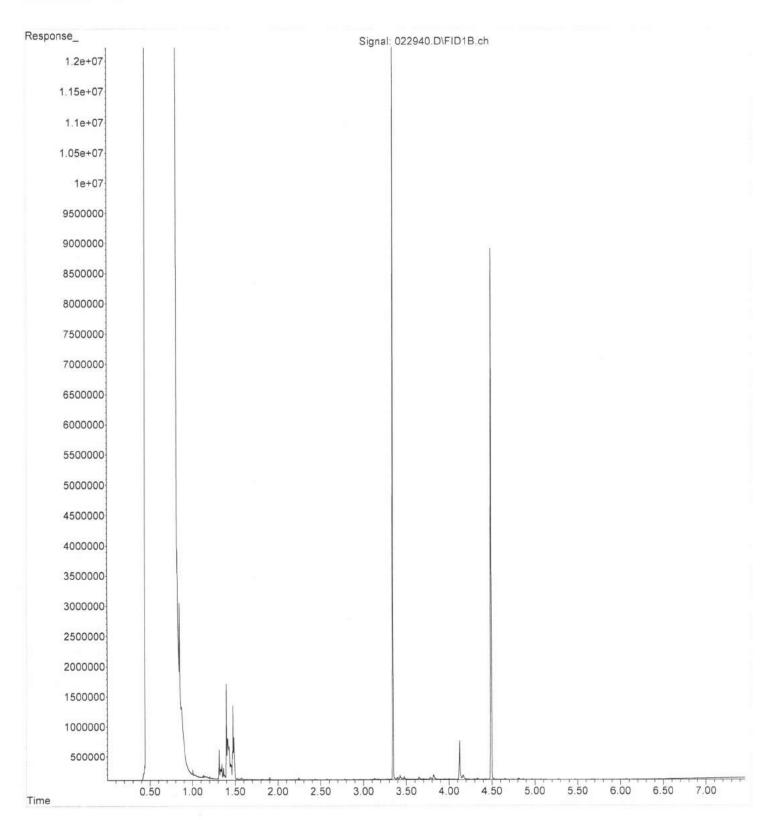


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Operator : IJL

Acquired : 29 Feb 2024 03:58 pm using AcqMethod DX.M

Acquired . 2.
Instrument : GC10
Sample Name: 4023\$3-20

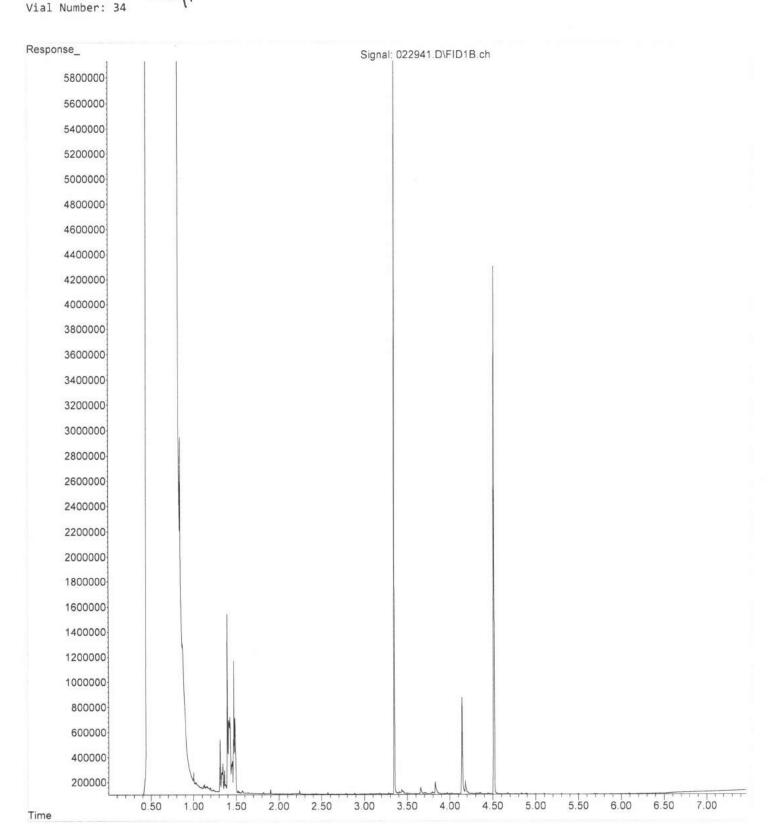


File :P:\Proc\_GC10\02-29-24\022941.D

Operator : IJL

Acquired : 29 Feb 2024 04:09 pm using AcqMethod DX.M

Instrument: GC10
Sample Name: 4023 3-21
Misc Info: 600



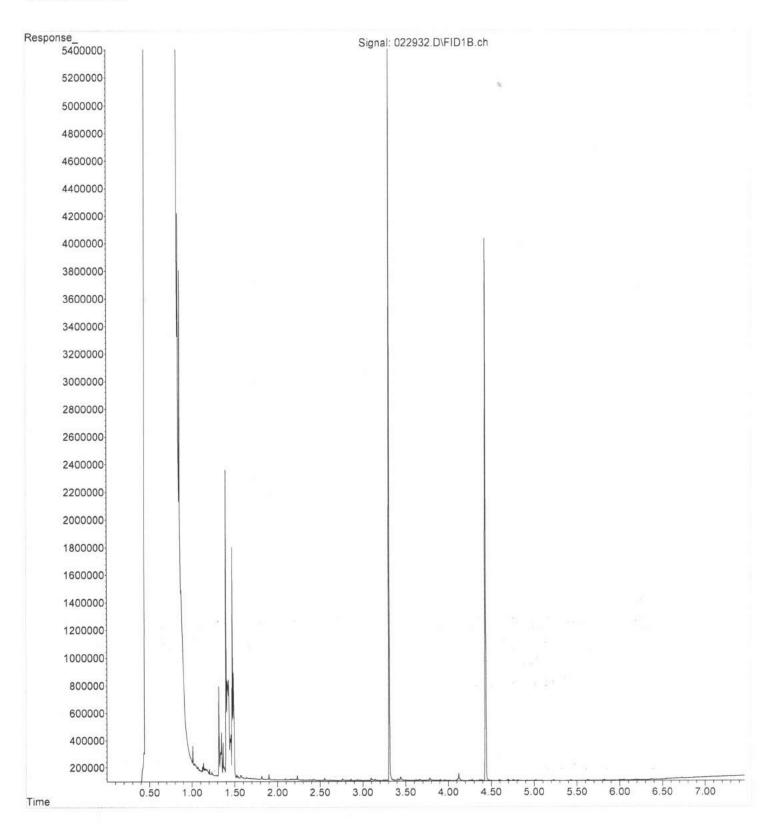
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Operator : IJL

Acquired : 29 Feb 2024 02:25 pm using AcqMethod DX.M

Instrument : GC10 Sample Name: 04-480 mb

Misc Info : Vial Number: 25



File

:P:\Proc\_GC10\02-29-24\022903.D

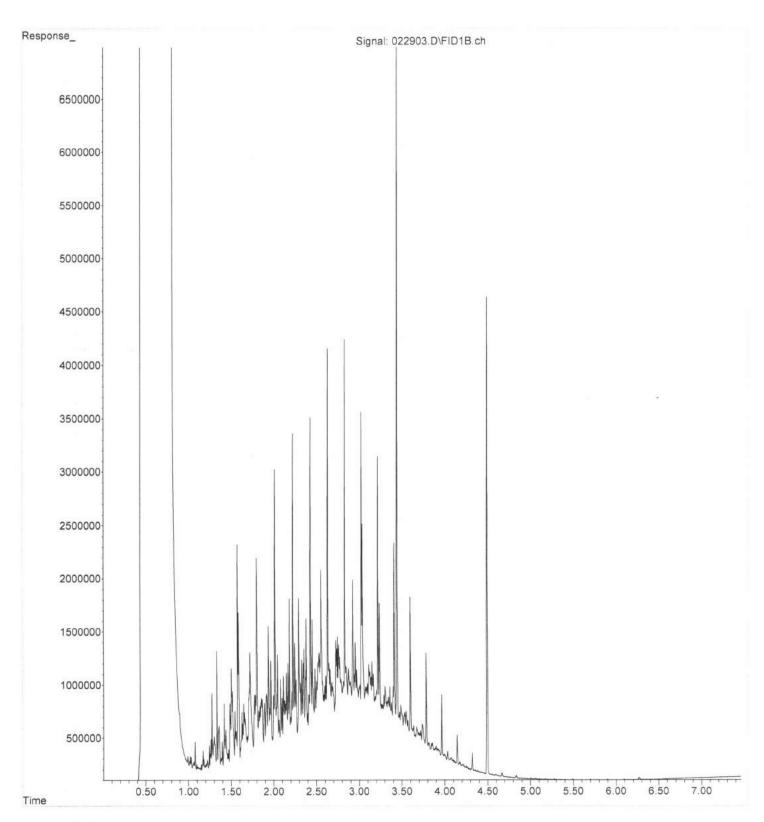
Operator : IJL

Acquired : 29 Feb 2024 08:50 am using AcqMethod DX.M

Instrument : GC10

Sample Name: 500 DX 71-40D

Misc Info : Vial Number: 3





March 11, 2024

Michael Erdahl Friedman & Bruya, Inc. 5500 4th Avenue South Seattle, WA 98108

Re: Analytical Data for Project 402383 Laboratory Reference No. 2402-360

#### Dear Michael:

Enclosed are the analytical results and associated quality control data for samples submitted on February 28, 2024.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

Date of Report: March 11, 2024 Samples Submitted: February 28, 2024 Laboratory Reference: 2402-360

Project: 402383

#### **Case Narrative**

Samples were collected on February 27, 2024 and received by the laboratory on February 28, 2024. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below. However the soil results for the QA/QC samples are reported on a wet-weight basis.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: March 11, 2024 Samples Submitted: February 28, 2024 Laboratory Reference: 2402-360

Project: 402383

#### DISSOLVED GASES RSK 175

Matrix: Water
Units: ug/L (ppb)

					Date	Date	
Analyte	Result	PQL	MDL	Method	Prepared	Analyzed	Flags
Client ID:	MW05-022724						
Laboratory ID:	02-360-01						
Methane	42	0.55	0.53	RSK 175	3-5-24	3-5-24	
Ethane	ND	0.56	0.33	RSK 175	3-5-24	3-5-24	
Ethene	29	0.58	0.33	RSK 175	3-5-24	3-5-24	
Surrogate:	Percent Recovery	Control Limits					
1-Butene	88	50-150					
Client ID:	MW06-022724						
Laboratory ID:	02-360-02						
Methane	52	0.55	0.53	RSK 175	3-5-24	3-5-24	
Ethane	ND	0.56	0.33	RSK 175	3-5-24	3-5-24	
Ethene	ND	0.58	0.33	RSK 175	3-5-24	3-5-24	
Surrogate:	Percent Recovery	Control Limits					
1-Butene	88	50-150					
Client ID:	01MW85-02272	4					
Laboratory ID:	02-360-03						
Methane	2500	28	27	RSK 175	3-5-24	3-5-24	
Ethane	ND	0.56	0.33	RSK 175	3-5-24	3-5-24	
Ethene	14	0.58	0.33	RSK 175	3-5-24	3-5-24	
Surrogate:	Percent Recovery	Control Limits					
1-Butene	97	50-150					

Date of Report: March 11, 2024 Samples Submitted: February 28, 2024 Laboratory Reference: 2402-360

Project: 402383

#### DISSOLVED GASES RSK 175 QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

					Date	Date	
Analyte	Result	PQL	MDL	Method	Prepared	Analyzed	Flags
METHOD BLANK							
Laboratory ID:	MB0305W1						
Methane	ND	0.55	0.53	RSK 175	3-5-24	3-5-24	
Ethane	ND	0.56	0.33	RSK 175	3-5-24	3-5-24	
Ethene	ND	0.58	0.33	RSK 175	3-5-24	3-5-24	
Surrogate:	Percent Recovery	Control Limits					
1-Butene	100	50-150					

Analyte	Re	sult	Spike	Level		cent overy	Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK										
Laboratory ID:	SB03	05W1								
	SB	SBD	SB	SBD	SB	SBD				
Methane	44.5	40.4	44.2	44.2	101	91	75-125	10	25	
Ethane	84.0	76.0	83.2	83.2	101	91	75-125	10	25	
Ethene	78.8	72.0	77.7	77.7	101	93	75-125	9	25	
Surrogate:										
1-Butene					102	92	50-150			



#### **Data Qualifiers and Abbreviations**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 Hydrocarbons in diesel range are impacting lube oil range results.
- O Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 The practical quantitation limit is elevated due to interferences present in the sample.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a mercury cleanup procedure.
- X1 Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- X2 Sample extract treated with a silica gel cleanup procedure.
- Y The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Y1 Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference



# SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Address\_ Company. City, State, ZIP Seattle, WA 98108 Send Report To Michael Erdahl 5500 4th Ave S Friedman and Bruya, Inc. SUBCONTRACTER PROJECT NAME/NO. Onsite 402383

Phone #_(206) 285-8282 merdahl@friedmanandbruya.com Ethane, Ethene BHA EDD Fluyd Spuble & EDD	Address 5500 4th Ave S 402383 9-68 9
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# 02-360

Page # \_\_\_1\_\_ of \_\_\_1

TURNAROUND TIME

Standard TAT

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Rush charges authorized by:
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SAMPLE DISPOSAL
Dispose after 30 days
Return samples

Will call with instructions

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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Ave South Seattle, WA 98108-2419 (206) 285-8282 office@friedmanandbruya.com www.friedmanandbruya.com

March 6, 2024

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 February 27, 2024 from the Cantera TOC, F&BI 402385 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: Pamela Osterhout

FDS0306R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2024 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera TOC, F&BI 402385 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
402385 -01	Gravity-022624
402385 -02	Clear Vault-022624
402385 -03	Inf Vault-022624

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Gravity-022624	Client:	Floyd-Snider
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Cantera TOC, F&BI 402385 Date Received: 02/27/24Project: Lab ID: Date Extracted: 402385-01 1/10 03/04/24 12:00 Date Analyzed: 03/04/24 Data File: 030423.DMatrix: Water Instrument: GCMS11

Units: ug/L (ppb) Operator: IJL

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	97	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	104	72	130

#### Concentration

Compounds: ug/L (ppb)

Vinyl chloride 27 cis-1,2-Dichloroethene 23 Trichloroethene 110

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: Clear Vault-022624 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402385

Lab ID: Date Extracted: 03/04/24 12:00 402385-02 Date Analyzed: 03/04/24 Data File: 030424.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: IJL

Upper Lower Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 91 78 126 Toluene-d8 101 84 115 4-Bromofluorobenzene 107 72 130

Concentration

Compounds: ug/L (ppb)

Vinyl chloride <0.02 cis-1,2-Dichloroethene <1 Trichloroethene 17

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: Inf Vault-022624 Client: Floyd-Snider

Date Received: 02/27/24 Project: Cantera TOC, F&BI 402385

Lab ID: Date Extracted: 03/04/24 12:00 402385-03 Date Analyzed: 03/04/24 Data File: 030425.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: IJL

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

Concentration

Compounds: ug/L (ppb)

Vinyl chloride 0.15 cis-1,2-Dichloroethene 3.6 Trichloroethene 40

#### **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, F&BI 402385

Lab ID: 04-0494 mb Date Extracted: 03/04/24 Date Analyzed: 03/04/24 Data File: 030409.DMatrix: Water Instrument: GCMS11 Units: ug/L (ppb) Operator: MD

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

Concentration

Compounds: ug/L (ppb)

Vinyl chloride <0.02 cis-1,2-Dichloroethene <1 Trichloroethene <0.5

#### ENVIRONMENTAL CHEMISTS

Date of Report: 03/06/24 Date Received: 02/27/24

Project: Cantera TOC, F&BI 402385

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

Laboratory Code: 402437-01 (Matrix Spike)

				Percent	
	Reporting	Spike	Sample	Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Vinyl chloride	ug/L (ppb)	10	< 0.02	102	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	101	10-211
Trichloroethene	ug/L (ppb)	10	< 0.5	100	35 - 149

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	ug/L (ppb)	10	103	99	64-142	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	106	101	70-130	5
Trichloroethene	ug/L (ppb)	10	102	103	70-130	1

#### **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 below the standard reporting limit. 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.

Report To Krishn Anderson + Pam Company Floyd Snicler Address (OC) Union St, Swi City, State, ZIP Seathle, WA Phone 292-2076, Email CAMBI E CHAIN OF CHETONY

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