

Memorandum

To: Mark Adams and Tena Seeds, Washington State Department of Ecology

CC: Doug Ciserella and Mike Ciserella, TOC Seattle Terminal 1, LLC
Bill Joyce, Joyce Ziker Partners PLLC
Grant Hainsworth and Jamie Stevens, CRETE Consulting

From: Kristin Anderson, LHG, and Lynn Grochala, Floyd|Snider

Date: April 15, 2021

Project No: Cantera-TOC

Re: Time Oil Bulk Terminal Site: First Quarter 2021 Progress Report

Floyd|Snider is providing this quarterly progress report for the Time Oil Bulk Terminal Site (Site), in accordance with Section XII of the Prospective Purchaser Consent Decree (PPCD) between the Washington State Department of Ecology (Ecology) and TOC Seattle Terminal 1, LLC. The reporting period for this progress report includes activities performed from execution of the PPCD on October 15, 2020, through March 2021. This includes the first full quarter after the effective date of the PPCD (November 25, 2020).

SUMMARY OF ACTIVITIES (SECTION XII.A)

Activities completed during this reporting period, and other activities completed under the PPCD before the start of the reporting period, included the following:

Deliverables and Data Collection

- Submitted the Agency Review Draft Pre-Remedial Design Investigation Work Plan (PRDI Work Plan) for Ecology review on July 31, 2020. Final Ecology comments on the draft PRDI Work Plan were received on October 6, 2020, and the Final PRDI Work Plan incorporating Ecology comment was submitted on October 20, 2020. The PRDI Work Plan was subsequently approved by Ecology via email correspondence on October 20, 2020.
- Collected pre-remedial design data in accordance with the Final PRDI Work Plan on November 12 to 13, 2020. Initial data collection included soil geotechnical data in Cleanup Action Area (CAA) 4, soil and groundwater geochemical data in CAA-5, and soil characterization data in CAA-7. Additional soil data collection was completed for

CAA-7 on November 30, 2020; December 10, 2020; February 22, 2021; and March 22, 2021.

- Submitted the Agency Review Draft Engineering Design Report (EDR) for Ecology review:
 - Sections 1 to 3 of the EDR main text were submitted on January 25, 2021, and initial Ecology comments on these sections were received on February 2, 2021.
 - Appendix B (PRDI Summary Report) was submitted on February 4, 2021.
 - Remaining portions of the EDR main text, Appendices D through F, and portions of Appendix G were submitted on February 12, 2021.
 - Appendix A (Construction Drawings) was submitted on February 19, 2021.
- Preliminary Ecology comments on the Agency Review Draft EDR were received on March 18 and 23, 2021. Final Ecology comments on the Agency Review Draft EDR are expected in mid-April 2021.

Other Activities

- Submitted Financial Assurance Costs to Ecology on January 22, 2021.
- Coordinated with Washington State Department of Archaeology and Historic Preservation (DAHP), including a meeting with DAHP, CRETE, and TOC Seattle Terminal 1, LLC, on March 15, 2021, regarding the Time Oil warehouse building. Determined in coordination with DAHP that no mitigation or additional documentation is required for the property buildings prior to demolition.
- Decommissioned wells in remediation areas by a licensed driller (ESN Northwest) between March 19 and 23, 2021, with Ecology concurrence received via email on March 18, 2021. Wells were decommissioned in accordance with the Draft Groundwater Monitoring Plan presented in Appendix A of the Cleanup Action Plan and additional feedback provided by Ecology. The injection well system on the Bulk Terminal property was decommissioned concurrently with monitoring wells. An inventory of decommissioned monitoring wells is included as Attachment 1.
- Initiated building abatement activities on March 22, 2021, in preparation for building demolition ahead of remedial construction.
- TOC Seattle Terminal 1, LLC, representative Kim Hempel and Ms. Tena Seeds of Ecology performed a site walk on March 23, 2021, to observe site conditions, topography, etc.
- Obtained permits for remedial construction:
 - Received King County Industrial Waste Discharge Permit on March 25, 2021, and provided the permit to Ecology on March 26, 2021.

- Submitted application documents and completed public notices for National Pollutant Discharge Elimination System permit. This permit is expected to be issued in April 2021.

DESCRIPTION OF DEVIATIONS FROM REQUIRED TASKS (SECTION XII.B)

- None

ANTICIPATED PROBLEMS IN MEETING SCHEDULE OR OBJECTIVES AND ASSOCIATED SOLUTIONS (SECTIONS XII.C AND XII.D)

- There are no anticipated problems in meeting the schedule of deliverables specified in Exhibit D of the PPCD. The current schedule of deliverables and activities specified in Table 8.1 of the Cleanup Action Plan (Exhibit C of the PPCD) are currently on track and ahead of schedule.

SAMPLING, TESTING, OR OTHER DATA REPORTS RECEIVED (SECTION XII.E)

The following analytical data were collected in accordance with the PRDI Work Plan during this reporting period:

- Soil geotechnical data for in situ stabilization design
- Soil and groundwater geochemical data for PlumeStop design
- Soil analytical data for CAA-7 excavation design

In accordance with Section XII.E, copies of the laboratory reports received through February 4, 2021, were provided with the PRDI Data Summary (Appendix B of the Agency Review Draft EDR). Laboratory reports received during the remainder of the reporting period, for PRDI soil samples collected from CAA-7, are included in Attachment 2. A summary of these data, and their application to remedial design, will also be provided in the revised PRDI Data Summary (Appendix B of the revised EDR).

Laboratory analytical data for soil samples collected as part of the PRDI and additional confirmation samples collected during remedy implementation (for those remaining in place after completion of the remedial action) will be uploaded to Ecology's Environmental Information Management (EIM) system, as required by the PPCD, after completion of remedial construction.

ACTIVITIES ANTICIPATED TO BE COMPLETED DURING THE NEXT REPORTING PERIOD (SECTION XII.F)

The following activities are anticipated to be completed during the next quarterly reporting period (April 1 to June 30, 2021):

- Revision of the Agency Review Draft EDR after receipt of final Ecology comments on the draft EDR
- Issuance of remaining permits and contractor mobilization for remedial construction
- Completion of building abatement and demolition of above-grade structures
- Submittal of groundwater, sediment, and in situ soil data collected between August 2018 and July 2019 to Ecology's EIM database

**DELIVERABLES ANTICIPATED TO BE COMPLETED DURING THE NEXT REPORTING PERIOD
(SECTION XII.G)**

The following deliverables are anticipated to be completed during the next quarterly reporting period of April through June 2021:

- The Final EDR is expected to be submitted in May 2021; the submittal the date will depend on receipt of final Ecology comments on the Agency Review Draft EDR.

OTHER PERTINENT INFORMATION, INCLUDING CHANGES IN KEY PERSONNEL

- None

LIST OF ATTACHMENTS

Attachment 1 Inventory of Decommissioned Monitoring Wells

Attachment 2 Laboratory Analytical Reports for CAA-7

Attachment 1
Inventory of Decommissioned Monitoring Wells

**Attachment 1
Inventory of Decommissioned Monitoring Wells**

Well ID	Well ID	Screen Top	Screen	Intstall Date	Rationale
01MW01	AFF184	10.0	25.00	09/11/1999	Remediation Area
01MW02	AFF185	10.0	25.00	09/11/1999	Remediation Area
01MW04	AFF187	10.0	25.00	09/11/1999	Remediation Area
01MW05	AFF188	10.0	25.00	09/11/1999	Remediation Area
01MW07	AFR605	13.0	28.00	11/27/2000	Remediation Area
01MW09	AFR604	9.0	25.00	11/27/2000	Remediation Area
01MW10	AFR603	9.0	25.00	11/27/2000	Remediation Area
01MW11	AFR606	15.0	30.00	11/28/2000	2-zone well
01MW13	AFR601	5.0	20.00	11/17/2000	Remediation Area
01MW16	AGF506	10.0	20.00	07/19/2001	Remediation Area
01MW18	AGT783	5.0	25.00	03/11/2002	Remediation Area
01MW19	AGT784	5.0	25.00	03/11/2002	Remediation Area
01MW20	AGT785	5.0	25.00	03/11/2002	Remediation Area
01MW24	AHR826	5.0	19.00	12/03/2002	Remediation Area
01MW27	AHR829	5.0	19.00	12/04/2002	Remediation Area
01MW28	AHR830	5.0	23.00	12/05/2002	Remediation Area
01MW29	AHR831	5.0	19.00	12/05/2002	Remediation Area
01MW31	APL576	5.0	15.00	07/06/2006	Dry well
01MW32	APL577	17.0	27.00	07/06/2006	2-zone well
01MW33	APL578	5.0	20.00	07/07/2006	2-zone well
01MW37	APL370	7.5	22.50	09/07/2006	2-zone well
01MW38	APL371	7.5	22.50	09/07/2006	2-zone well
01MW42	APL376	7.0	22.00	09/08/2006	Decommissioned in error- to reinstall
01MW43	APL375	7.0	22.00	09/08/2006	Remediation Area
01MW44	ALN355	15.0	30.00	09/13/2006	Remediation Area
01MW45	ALN356	12.0	27.00	09/13/2006	Remediation Area
01MW54	BBA609	37.0	42	11/13/2008	Remediation Area
01MW55	BBA601	16.0	31	11/13/2008	Remediation Area
01MW59	BBA 615	13.5	28.5	11/17/2008	Remediation Area
01MW62	BBA844	24.0	39	12/30/2008	Remediation Area
01MW63	BBA845	19.5	32	12/30/2008	Remediation Area
01MW64	BBL 514	25.0	40	03/17/2009	Remediation Area
01MW65	BBL 515	52.0	62.00	03/18/2009	Remediation Area
01MW67	BCS163	9.0	24	07/24/2009	Remediation Area
01MW68	BCS164	7.0	22	07/24/2009	Remediation Area
01MW69	BCS165	9.0	24	07/24/2009	Remediation Area
01MW70	BCP158	5.0	20	02/11/2010	Remediation Area
01MW71	BCP159	5.0	20	02/11/2010	Remediation Area
01MW72	--	3.0	23	03/10/2010	Remediation Area
01MW73	BCP375	3.0	21.5	03/10/2010	Remediation Area
01MW74	--	4.0	21.5	03/10/2010	BMP- bare PVC and adjacent to 01MW12
01MW75	BCP377	3.0	18	03/10/2010	Remediation Area
01MW76	BHB076	35.0	40	02/28/2011	Remediation Area
01MW77	BHB077	36.0	41	03/03/2011	Remediation Area
01MW78	BHB078	45.0	50	03/03/2011	Remediation Area
01MW79	BHB079	5.0	19	03/03/2011	Remediation Area
01MW81	BHB247	19.5	28.5	04/18/2011	BMP- immediately adjacent to MW05
01MW82	BHB248	19.0	27	04/18/2011	BMP- immediately adjacent to MW05
01MW90	BHM071	3.0	18	12/29/2011	Remediation Area
01MW91	BHM072	3.0	18	12/29/2011	Remediation Area
02MW04	AFF191	10.0	20	09/13/1999	Remediation Area
02MW05	AFF192	20.0	34.5	09/13/1999	Remediation Area
02MW06	--	9.5	19.5	11/22/2000	Remediation Area
02MW15	BAH915	5.0	15	04/23/2015	Remediation Area
MW03	APK543	7.0	14	04/18/2006	Remediation Area
MW04	APK544	18.0	28	04/18/2006	Remediation Area
01IW09	BCP161	24.0	29.00	02/12/2010	Remediation Area
01IW10	BCP162	24.0	29.00	02/12/2010	Remediation Area
01SVE01	BCP160	5.0	13.00	02/11/2010	Remediation Area

Note:

-- Well ID number unknown; decommissioned under variance granted by Ecology Water Resources Program.

Abbreviation:

bgs Below ground surface

Attachment 2
Laboratory Analytical Reports for CAA-7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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February 2, 2021

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

Dear Ms Grochala:

Included are the additional results from the testing of material submitted on November 13, 2020 from the Cantera - TOC, F&BI 011267 project. There are 13 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: Kristin Anderson
FDS0202R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 13, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera - TOC, F&BI 011267 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
011267 -01	Comp1-A-0-0.5
011267 -02	Comp1-A-0.5-1
011267 -03	Comp1-B-0-0.5
011267 -04	Comp1-B-0.5-1
011267 -05	Comp1-D-0-0.5
011267 -06	Comp1-D-0.5-1
011267 -07	Comp1-C-0-0.5
011267 -08	Comp1-C-0.5-1
011267 -09	Comp-1-0-0.5
011267 -10	Comp-1-0.5-1
011267 -11	Comp2-A-0-0.5
011267 -12	Comp2-A-0.5-1
011267 -13	Comp2-B-0-0.5
011267 -14	Comp2-B-0.5-1
011267 -15	Comp2-C-0-0.5
011267 -16	Comp2-C-0.5-1
011267 -17	Comp2-D-0-0.5
011267 -18	Comp2-D-0.5-1
011267 -19	Comp-2-0-0.5
011267 -20	Comp-2-0.5-1
011267 -21	Comp3-A-0-0.5
011267 -22	Comp3-A-0.5-1
011267 -23	Comp3-B-0-0.5
011267 -24	Comp3-B-0.5-1
011267 -25	Comp3-C-0-0.5
011267 -26	Comp3-C-0.5-1
011267 -27	Comp3-D-0-0.5
011267 -28	Comp3-D-0.5-1
011267 -29	Comp-3-0-0.5
011267 -30	Comp-3-0.5-1
011267 -31	Comp4-A-0-0.5
011267 -32	Comp4-A-0.5-1
011267 -33	Comp4-B-0-0.4
011267 -34	Comp4-C-0-0.5
011267 -35	Comp4-C-0.5-1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

011267 -36	Comp4-D-0-0.5
011267 -37	Comp4-D-0.5-1
011267 -38	Comp-4-0-0.5
011267 -39	Comp-4-0.5-1
011267 -40	Comp5-A-0-0.5
011267 -41	Comp5-B-0-0.5
011267 -42	Comp5-B-0.5-1
011267 -43	Comp5-C-0-0.5
011267 -44	Comp5-C-0.5-1
011267 -45	Comp5-D-0-0.5
011267 -46	Comp5-D-0.5-1
011267 -47	Comp-5-0-0.5
011267 -48	Comp-5-0.5-1
011267 -49	Comp6-A-0-0.5
011267 -50	Comp6-A-0.5-1
011267 -51	Comp6-B-0-0.5
011267 -52	Comp6-B-0.5-1
011267 -53	Comp6-C-0-0.5
011267 -54	Comp6-C-0.5-1
011267 -55	Comp6-C-0.5-1-D
011267 -56	Comp6-D-0-0.4
011267 -57	Comp6-D-0-0.4-D
011267 -58	Comp-6-0-0.5
011267 -59	Comp-6-0.5-1
011267 -60	Comp-6-0.5-1-D
011267 -61	Comp7-A-0-0.5
011267 -62	Comp7-A-0.5-1
011267 -63	Comp7-B-0-0.5
011267 -64	Comp7-B-0.5-1
011267 -65	Comp7-C-0-0.5
011267 -66	Comp7-C-0.5-1
011267 -67	Comp7-D-0-0.4
011267 -68	Comp-7-0-0.5
011267 -69	Comp-7-0.5-1
011267 -70	SW1-0.25-0.75
011267 -71	SW2-0.25-0.75
011267 -72	SW3-0.25-0.75
011267 -73	SW4-0.25-0.75
011267 -74	SW5-0.25-0.75
011267 -75	SW6-0.25-0.75

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

011267 -76	SW7-0.25-0.75
011267 -77	SW8-0.25-0.75
011267 -78	SW9-0.25-0.75
011267 -79	SW10-0.25-0.75
011267 -80	B1-1.0-1.25
011267 -81	B1-2.0-2.25
011267 -82	B2-1.0-1.25
011267 -83	B2-2.0-2.25
011267 -84	B3-1.0-1.25
011267 -85	B3-2.0-2.25
011267 -86	B3-2.0-2.25-D
011267 -87	B4-1.0-1.25
011267 -88	B4-2.0-2.25

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp1-B-0.5-1	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-04
Date Analyzed:	01/28/21	Data File:	011267-04.053
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	11.5
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp1-C-0.5-1	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-08
Date Analyzed:	01/28/21	Data File:	011267-08.054
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	6.41
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp2-A-0.5-1	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-12
Date Analyzed:	01/28/21	Data File:	011267-12.057
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.54
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp3-A-0.5-1	Client:	Floyd-Snider
Date Received:	11/13/21	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-22
Date Analyzed:	01/28/21	Data File:	011267-22.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	4.59
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp3-B-0.5-1	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-24
Date Analyzed:	01/28/21	Data File:	011267-24.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.43
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp5-B-0.5-1	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-42
Date Analyzed:	01/28/21	Data File:	011267-42.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	8.68
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp6-D-0-0.4	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	011267-56
Date Analyzed:	01/28/21	Data File:	011267-56.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.07
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	01/28/21	Lab ID:	I1-53 mb
Date Analyzed:	01/28/21	Data File:	I1-53 mb.051
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/02/20

Date Received: 11/13/21

Project: Cantera - TOC, F&BI 011267

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

Laboratory Code: 011267-12 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	93	96	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	89	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. 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 lowest calibration standard. 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.

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.

NWPH's

SAMPLE CHAIN OF CUSTODY

11-13-20

P 14

Report to: Kevin Anderson 01267

Company: City of Seattle

Address: 12112A Street Suite 600

City, State, ZIP: Seattle, WA 98101

Phone: 206-232-2070

SAMPLERS (signature) Col. G...

PROJECT NAME: CANTEXA-TOC

FO #:

INVOICE TO: CANTEXA-TOC

REMARKS:

Project specific P&S - Yes / No

Page # 1 of 9

TURNAROUND TIME

Standard turnaround

RUSH AS ONLY & day

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							Archive	Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082			
COMP1-A-0-0.5	01	11/13/20	9:45	Soil	1								<input checked="" type="checkbox"/>	Hold volume	
COMP2-A-0.5-1	02		9:46		1								<input checked="" type="checkbox"/>	For additional	
COMP2-B-0-0.5	03		9:55		1								<input checked="" type="checkbox"/>	Metal analysis	
COMP2-B-0.5-1	04		9:56		1								<input checked="" type="checkbox"/>	per KA	
COMP2-C-0-0.5-1	05												<input checked="" type="checkbox"/>	per KA	
COMP2-D-0-0.5	05		10:05		1								<input checked="" type="checkbox"/>	11/18	
COMP2-D-0.5-1	06		10:06		1								<input checked="" type="checkbox"/>	3-day TAT	
COMP2-C-0-0.5	07		10:25		1								<input checked="" type="checkbox"/>	-SK TAT	
COMP2-C-0.5-1	08		10:26		1								<input checked="" type="checkbox"/>	per KA 11/2/21	

Requested by: SIGNATURE

Received by: SIGNATURE

Requested by: SIGNATURE

Received by: SIGNATURE

PRINT NAME: Kevin Anderson

COMPANY: FB

DATE: 11/13/20 TIME: 1721

DATE: 11/30 TIME: 1912

Samples received at:

Friedman & Brava, Inc

3012 1st Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Report To Sr. Pg 1

011284

Company Floyd Snider

Address _____

City, State, ZIP _____

Phone _____ Email _____

SAMPLE CHAIN OF CUSTODYWB

11-13-20

014

SAMPLERS (signature) <u>C. Snider</u>	PO #
PROJECT NAME <u>CANTEA-TOC</u>	INVOICE TO <u>CANTEA-TOC</u>
REMARKS <u>CANTEA-TOC</u>	

Page # 2 of 9

TURNAROUND TIME

Standard turnaround
 RUSH. At weekend day.
 Rush charges authorized by: _____

SAMPLE DISPOSAL

Archive samples
 Other _____

Default: Dispose after 90 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes		
						NWTPH-Dx	NWTPH-Gx	BTX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082			
COMPA-1-0-0.5	09	11/13/20	10:30	Soil	1								X	X	Archive
COMPA-1-0.5-1	10		10:31		1										X
COMPA-A-0-0.5	11		11:06		1										X
COMPA-A-0.5-1	12		11:11		1										X
COMPA-B-0-0.5	13		10:35		1										X
COMPA-B-0.5-1	14		10:36		1										X
COMPA-C-0-0.5	15		10:45		1										X
COMPA-C-0.5-1	16		10:46		1										X
COMPA-D-0-0.5	17		10:50		1										X
COMPA-D-0.5-1	18		10:51		1										X

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	<u>Kush Indusan</u>	<u>ZS</u>	<u>11/13/20</u>	<u>17:21</u>
Received by: <u>[Signature]</u>	<u>Beae Leary</u>	<u>ZB1</u>	<u>11/13/20</u>	<u>17:44</u>
Relinquished by:				
Received by:				
Samples received at <u>2:00</u>				

Friedman & Bryva, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

0172674

SAMPLE CHAIN OF CUSTODY W/C 11-13-20

014

Report To See page 1
 Company Elwood Sander
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

SAMPLERS (signature) <u>Mr. Giff</u>	
PROJECT NAME <u>CANTERA-TOC</u>	PO # <u>11</u>
REMARKS	INVOICE TO
Project specific RI-2 - Yes / No	

Page # 3 of 9

TURNAROUND TIME

Standard turnaround
 RUSH See page 1
 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	Arsenic	TBT	Archive	
COMD3-2-0-0.5	19	11/13/20	1115	SOIL	1								X	X	Archive	
COMD3-2-0.5-1	20		1116		1									X		
COMD3-A-6-0.5	21		1146		1								✓	X		
COMD3-A-0.5-1	22		1141		1								⊗	X		
COMD3-B-0-0.5	23		1125		1								✓	X		
COMD3-R-0.5-1	24		1126		1								⊗	X		
COMD3-C-0-0.5	25		1136		1								✓	X		
COMD3-C-0.5-1	26		1131		1								✓	X		
COMD3-D-0-0.5	27		1135		1								✓	X		
COMD3-D-0.5-1	28		1136		1								✓	X		

Relinquished by: <u>[Signature]</u>	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Received by: <u>[Signature]</u>		<u>Kriston Anderson</u>	<u>FR</u>	<u>11/13/20</u>	<u>17:21</u>
Relinquished by: <u>[Signature]</u>		<u>Leanne Leberg</u>	<u>FR</u>	<u>11/13/20</u>	<u>19:21</u>
Received by: _____					

Samples received at 2 oc

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-3029
 Ph. (206) 285-8282

011267

SAMPLE CHAIN OF CUSTODY W/ 11-13-20

814

Page # 4 of 9

Report To See pg 2
 Company Rayd Slide
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

SAMPLES (signature) <u>Rayd</u>	PROJECT NAME <u>CANTERA-TOC</u>	PO # _____
REMARKS	INVOICE TO <u>CANTERA-TOC</u>	
Project specific RI? - Yes / No		

<input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH! Only if authorized by: _____ Rush charges authorized by: _____	SAMPLE DISPOSAL <input checked="" type="checkbox"/> Archive samples <input type="checkbox"/> 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	Arsecnic	TBT	Archive	
COM-P-3-0-0.5	29	11/13/20	1145	Soil	1									X	X	Archive
COM-P-3-0.5-1	30		1146		1											X
COM-P-4-0-0.5	31		1236		1											X
COM-P-4-A-0.5-1	32		1231		1											X
COM-P-4-B-0-0.5	33		1236		1											X
COM-P-4-C-0-0.5	34		1240		1											X
COM-P-4-C-0.5-1	35		1241		1											X
COM-P-4-D-0-0.5	36		1235		1											X
COM-P-4-D-0.5-1	37		1236		1											X
COM-P-4-0-0.5	38		1240		1											X

Relinquished by: <u>[Signature]</u>	PRINT NAME <u>Kristin Anderson</u>	COMPANY <u>ES</u>	DATE <u>11/13/20</u>	TIME <u>1721</u>
Received by: <u>[Signature]</u>	PRINT NAME <u>Yara Cassin</u>	COMPANY <u>RSI</u>	DATE <u>11/13/20</u>	TIME <u>1921</u>
Relinquished by: _____	PRINT NAME _____	COMPANY _____	DATE _____	TIME _____
Received by: _____	PRINT NAME _____	COMPANY _____	DATE _____	TIME _____

Samples received at _____

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 295-8282

011267

SAMPLE CHAIN OF CUSTODY ME 11-13-20

Page # 6 of 9

014

Report To See pg 1
 Company Foyd Snider
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

SAMPLERS (signature) [Signature]
 PROJECT NAME CANTEKA-TOC PO # _____
 REMARKS CANTEKA-TOC
 INVOICE TO _____
 Project specific RI? - Yes / No

TURNAROUND TIME
 Standard turnaround
 RUSH AS RATED
 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								
						NWTFH-Dx	NWTFH-Gx	BTEX EPA 8021	NWTFH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082		Asenic	TBT	Archive					
COMPS-4-0.5-1	40	11/13/20	1241	soil	1																
COMPS-A-0-0.5	40		1300		1																
COMPS-B-0-0.5	41		1305		1																
COMPS-B-0.5-1	42		1306		1																
COMPS-C-0-0.5	43		1310		1																
COMPS-C-0.5-1	44		1311		1																
COMPS-D-0-0.5	45		1315		1																
COMPS-D-0.5-1	46		1316		1																
COMPS-5-0-0.5	47		1320		1																
COMPS-5-0.5-1	48		1321		1																

Riedmann & Bruja, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2039
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	<u>Karin Wilson</u>	<u>RS</u>	<u>11/13/20</u>	<u>11:21</u>
<u>[Signature]</u>	<u>Space Bossing</u>	<u>RSI</u>	<u>11/14/20</u>	<u>11:15</u>
Received by:		Samples received at		

011267

SAMPLE CHAIN OF CUSTODY IWE 11-13-20

Page # 10 of 9

Report To: See pg 1
 Company: Floyd Snyder
 Address: _____
 City, State, ZIP: _____
 Phone: _____ Email: _____

SAMPLES (signature)
 PROJECT NAME: CANTEPA-TOC
 REMARKS: CANTEPA-TOC
 INVOICE TO: _____

TURNAROUND TIME
 Standard turnaround
 RUSH (No. shall apply)
 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	Arsenic	Tot	Archive				
COMPL- A-D-0.5	49		1330		1												X	Archive	
COMPL- A-05-1	50		1331		1													X	
COMPL- B-0-0.5	51		1340		1													X	
COMPL- B-0.5-1	52		1341		1													X	
COMPL- C-0-0.5	53		1345		1													X	
COMPL- C-0.5-1	54		1346		1													X	
COMPL- C-0.5-1-D	55		1348		1													X	
COMPL- D-0-0.4	56		1350		1													X	
COMPL- D-0-0.4-D	57		1352		1													X	
COMPL- 0-0.6.5	58		1355															X	

Received by: _____
 Received by: _____
 Received by: _____
 Received by: _____

Signature: _____
 Signature: _____
 Signature: _____
 Signature: _____

PRINT NAME: Kish Anderson
 PRINT NAME: SAUC Leasing
 PRINT NAME: _____
 PRINT NAME: _____

COMPANY: _____
 COMPANY: (FB)
 COMPANY: _____
 COMPANY: _____

DATE: 11/3/20
 DATE: 11/3/20
 DATE: _____
 DATE: _____

TIME: 7:21
 TIME: 7:21
 TIME: _____
 TIME: _____

Samples received at: _____
 Samples received at: _____
 Samples received at: _____
 Samples received at: _____

Friedman & Bruce, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-3232

SAMPLE CHAIN OF CUSTODY W/C 11-13-20

~~01767~~

Page # 7 of 9
 B14

Report To: See page 1
 Company: Flydd Snider
 Address: _____
 City, State, ZIP: _____
 Phone: _____ Email: _____

SAMPLERS (signature) John Snider
 PROJECT NAME: CANTEXA-TOC
 PO #: _____
 REMARKS: CANTEXA-TOC
 INVOICE TO: _____
 Project specific RI#? - Yes / No

TURNAROUND TIME
 Standard turnaround
 RUSH (No SWM Army
 Push charges authorized by: _____
 SAMPLE DISPOSAL
 Archive samples
 Other
 Default Dispose after 90 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	Arsenic	TBT	Archive						
COMP-6-0.5-1	59	11/12/20	1357	Soil	1																
COMP-6-0.5-2-D	60		1358		1																
COMP7-A-0.5	61		1405		1																
COMP7-A-0.5-1	62		1416		1																
COMP7-B-0.5	63		1410		1																
COMP7-B-0.5-1	64		1411		1																
COMP7-C-0.5	65		1415		1																
COMP7-C-0.5-1	66		1416		1																
COMP7-D-0.5	67		1426		1																
COMP7-0.5	68		1425		1																

Signature Section

Relinquished by: <u>[Signature]</u>	PRINT NAME: <u>Kathy Anderson</u>	COMPANY: <u>ES</u>	DATE: <u>11/13/20</u>	TIME: <u>1721</u>
Received by: <u>[Signature]</u>	PRINT NAME: <u>Scott Perry</u>	COMPANY: <u>FRS</u>	DATE: <u>11/14/20</u>	TIME: <u>1921</u>
Relinquished by: _____	PRINT NAME: _____	COMPANY: _____	DATE: _____	TIME: _____
Received by: _____	PRINT NAME: _____	COMPANY: _____	DATE: _____	TIME: _____

Samples received at 3 o'clock

Friedman & Bryna, Inc.
 3012 1st Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

01767

SAMPLE CHAIN OF CUSTODY W/ 4-13-20

014

Report To See pg 1

Company HydriSmelter

Address _____

City, State, ZIP _____

Phone _____ Email _____

Page # 8 of 9

TURNAROUND TIME

Standard turnaround
 RUSH AS AVAILABLE
Rush charges authorized by: _____

SAMPLE DISPOSAL
 Archive samples
 Other _____

Default: Dispose after 30 days

SAMPLERS (signature) <u>cdj</u>	PROJECT NAME <u>CANTERA-TOC</u>	PO #
PROJECT NAME <u>CANTERA-TOC</u>	INVOICE TO	
REMARKS		

ANALYSES REQUESTED

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	Arsenic	Cu, Cd, Pb, Ag, Zn	163, Hg	Archive	TCLP As/Pb	Notes	
COMP-7-0.5-1	69	11/3/20	1426	Soil	1												X		
SM1-0.25-0.75	70		1430		1												X		
SM2-0.25-0.75	71		1432		1												X		
SM3-0.25-0.75	72		1448		1												X		
SM4-0.25-0.75	73		1450		1												X		
SM5-0.25-0.75	74		1458		1												X		
SM6-0.25-0.75	75		1500		1												X		
SM7-0.25-0.75	76		1502		1												X		
SM8-0.25-0.75	77		1504		1												X		
SM9-0.25-0.75	78		1515		1												X		

Relinquished by: _____	PRINT NAME <u>KESH Anderson</u>	COMPANY <u>ES</u>	DATE <u>11/3/20</u>	TIME <u>1921</u>
Received by: _____	<u>Space Leasing</u>	<u>ES</u>	<u>11/3/20</u>	<u>1924</u>
Relinquished by: _____				
Received by: _____				

Friedman & Bryon, Inc.
3012 164 Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

017267

SAMPLE CHAIN OF CUSTODY MW

11-13-20

DL4

Report To Kristin Anderson

Company Playa/Snyder

Address 1001 Union Street Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2988 Fax 206-292-2989

SAMPLERS (signature) [Signature]

PROJECT NAME CANTEEN - TAC

PO # [Signature]

REMARKS

INVOICE TO

Page # 9 of 9

TURNAROUND TIME

Standard turnaround
5/BUIS. As only 2 AM
Rush charges authorized by: [Signature]

SAMPLE DISPOSAL

Standard
 Archive samples
 Other

Default Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes				
						NWTFH-Dx	NWTFH-Gx	BTEX EPA 8021	NWTFH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	C, Cd, Pb, Ag, Zn	1631 Hg					
SMD-B.25-075	79	11/13/20	1517	Soil	1															
B1-1.0-1.25	80		1535		1								X							
B1-2.0-2.25	81		1536		1								X							
B2-2.0-1.25	82		1545		1								X							
B2-2.0-2.25	83		1547		1								X							
B3-2.0-1.25	84		1556		1								X							
B3-2.0-2.25	85		1558		1								X							
B3-2.0-2.25-D	86		1554		1								X							
B4-1.0-1.25	87		1610		1								X							
B4-2.0-2.25	88		1612		1								X							

Relinquished by: <u>[Signature]</u>	PRINT NAME <u>Kristin Anderson</u>	COMPANY <u>IS</u>	DATE <u>11/13/20</u>	TIME <u>1721</u>
Received by: <u>[Signature]</u>	PRINT NAME <u>Isaac Vesly</u>	COMPANY <u>TRB</u>	DATE <u>11/19/20</u>	TIME <u>1721</u>
Relinquished by:				
Received by:			Samples received at <u>3</u>	<u>06</u>

Friedman & Bryna, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2039
 Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 16, 2021

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

Dear Ms Grochala:

Included are the additional results from the testing of material submitted on November 13, 2020 from the Cantera - TOC, F&BI 011267 project. There are 7 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: Kristin Anderson
FDS0316R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 13, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera - TOC, F&BI 011267 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
011267 -01	Comp1-A-0-0.5
011267 -02	Comp1-A-0.5-1
011267 -03	Comp1-B-0-0.5
011267 -04	Comp1-B-0.5-1
011267 -05	Comp1-D-0-0.5
011267 -06	Comp1-D-0.5-1
011267 -07	Comp1-C-0-0.5
011267 -08	Comp1-C-0.5-1
011267 -09	Comp-1-0-0.5
011267 -10	Comp-1-0.5-1
011267 -11	Comp2-A-0-0.5
011267 -12	Comp2-A-0.5-1
011267 -13	Comp2-B-0-0.5
011267 -14	Comp2-B-0.5-1
011267 -15	Comp2-C-0-0.5
011267 -16	Comp2-C-0.5-1
011267 -17	Comp2-D-0-0.5
011267 -18	Comp2-D-0.5-1
011267 -19	Comp-2-0-0.5
011267 -20	Comp-2-0.5-1
011267 -21	Comp3-A-0-0.5
011267 -22	Comp3-A-0.5-1
011267 -23	Comp3-B-0-0.5
011267 -24	Comp3-B-0.5-1
011267 -25	Comp3-C-0-0.5
011267 -26	Comp3-C-0.5-1
011267 -27	Comp3-D-0-0.5
011267 -28	Comp3-D-0.5-1
011267 -29	Comp-3-0-0.5
011267 -30	Comp-3-0.5-1
011267 -31	Comp4-A-0-0.5
011267 -32	Comp4-A-0.5-1
011267 -33	Comp4-B-0-0.4
011267 -34	Comp4-C-0-0.5
011267 -35	Comp4-C-0.5-1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (Continued)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
011267 -36	Comp4-D-0-0.5
011267 -37	Comp4-D-0.5-1
011267 -38	Comp-4-0-0.5
011267 -39	Comp-4-0.5-1
011267 -40	Comp5-A-0-0.5
011267 -41	Comp5-B-0-0.5
011267 -42	Comp5-B-0.5-1
011267 -43	Comp5-C-0-0.5
011267 -44	Comp5-C-0.5-1
011267 -45	Comp5-D-0-0.5
011267 -46	Comp5-D-0.5-1
011267 -47	Comp-5-0-0.5
011267 -48	Comp-5-0.5-1
011267 -49	Comp6-A-0-0.5
011267 -50	Comp6-A-0.5-1
011267 -51	Comp6-B-0-0.5
011267 -52	Comp6-B-0.5-1
011267 -53	Comp6-C-0-0.5
011267 -54	Comp6-C-0.5-1
011267 -55	Comp6-C-0.5-1-D
011267 -56	Comp6-D-0-0.4
011267 -57	Comp6-D-0-0.4-D
011267 -58	Comp-6-0-0.5
011267 -59	Comp-6-0.5-1
011267 -60	Comp-6-0.5-1-D
011267 -61	Comp7-A-0-0.5
011267 -62	Comp7-A-0.5-1
011267 -63	Comp7-B-0-0.5
011267 -64	Comp7-B-0.5-1
011267 -65	Comp7-C-0-0.5
011267 -66	Comp7-C-0.5-1
011267 -67	Comp7-D-0-0.4
011267 -68	Comp-7-0-0.5
011267 -69	Comp-7-0.5-1
011267 -70	SW1-0.25-0.75

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (Continued)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
011267 -71	SW2-0.25-0.75
011267 -72	SW3-0.25-0.75
011267 -73	SW4-0.25-0.75
011267 -74	SW5-0.25-0.75
011267 -75	SW6-0.25-0.75
011267 -76	SW7-0.25-0.75
011267 -77	SW8-0.25-0.75
011267 -78	SW9-0.25-0.75
011267 -79	SW10-0.25-0.75
011267 -80	B1-1.0-1.25
011267 -81	B1-2.0-2.25
011267 -82	B2-1.0-1.25
011267 -83	B2-2.0-2.25
011267 -84	B3-1.0-1.25
011267 -85	B3-2.0-2.25
011267 -86	B3-2.0-2.25-D
011267 -87	B4-1.0-1.25
011267 -88	B4-2.0-2.25

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp6-A-0-0.5	Client:	Floyd-Snider
Date Received:	11/13/20	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	03/12/21	Lab ID:	011267-49
Date Analyzed:	03/12/21	Data File:	011267-49.058
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	5.77
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera - TOC, F&BI 011267
Date Extracted:	03/12/21	Lab ID:	I1-162 mb
Date Analyzed:	03/12/21	Data File:	I1-162 mb.035
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/16/21

Date Received: 11/13/20

Project: Cantera - TOC, F&BI 011267

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

Laboratory Code: 103188-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	7.49	116 b	127 b	75-125	9 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	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. 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 lowest calibration standard. 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.

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.

HW's

SAMPLE CHAIN OF CUSTODY # 11-13-20

P 14

Report to: Geochimist
Justin Anderson 01/25/21

Company: City of Snyder

Address: 1000 Dunda Street Suite 600

City, State, ZIP: Snyder, WA 98781

Phone: 206-292-2070 Email: Justin.Anderson@CityofSnyder.com

SAMPLERS (signature) CLG PO #

PROJECT NAME: CANTREX-TOX

REMARKS: CANTREX-TOX

INVOICE TO

Project specific RI# - Yes / No

Page # 1 of 9
TURNAROUND TIME

Standard turnaround
 RUSH At 50% & day
Rush charges authorized by:

SAMPLE DISPOSAL
 Archive samples
 Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTFH-Dx	NWTFH-Gx	BTEX EPA 8021	NWTFH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	TBT	Archive	Notes
COMP1-A-0-0.5	01	11/13/20	9:45	Soil	1										X	Hold volume
COMP1-A-0.5-1	02		9:40		1										X	for additional
COMP1-B-0-0.5	03		9:55		1										X	for additional analysis
COMP1-B-0.5-1	04		9:56		1										X	for additional analysis
COMP2-C-0-0.5	05		10:05		1										X	for additional analysis
COMP1-D-0.5-1	06		10:06		1										X	for additional analysis
COMP1-C-0-0.5	07		10:25		1										X	for additional analysis
COMP1-C-0.5-1	08		10:26		1										X	for additional analysis

Signature: [Signature] PRINT NAME: Justin Anderson COMPANY: ES DATE: 11/13/20 TIME: 17:21

Received by: [Signature] Received by: Steve Lesing Received by: [Signature] Received by: [Signature] DATE: 11/17/20 TIME: 17:12

Requested by: [Signature] Requested by: [Signature] Requested by: [Signature] Requested by: [Signature] DATE: 11/17/20 TIME: 17:12

Received by: [Signature] Received by: [Signature] Received by: [Signature] Received by: [Signature] DATE: 11/17/20 TIME: 17:12

Requested by: [Signature] Requested by: [Signature] Requested by: [Signature] Requested by: [Signature] DATE: 11/17/20 TIME: 17:12

Friedman & Bryna, Inc.
3012 18th Avenue West
Seattle, WA 98119-2029
Ph: (206) 285-8292

SAMPLE CHAIN OF CUSTODY 4-13-20

011264

Page # 2 of 9

014

Report to: Seip 1
 Company: Flyd/Smider
 Address: _____
 City, State, ZIP: _____
 Phone: _____ Email: _____

SAMPLES (signature)	<u>Chad</u>
PROJECT NAME	<u>CANTEA-TOC</u>
PO #	<u>CANTEA-TOC</u>
REMARKS	
INVOICE TO	
Project specific RI's - Yes / No	

TURNAROUND TIME

Standard turnaround
 RUSH. At only 2 day
 Rush charges authorized by: _____

SAMPLE DISPOSAL

Archive samples
 Other
 Default: Dispose after 90 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	Asenic	TBT	Archive	Notes
COMP-1-0-0.5	09	11/13/20	10:30	Soil	1								X	X	X	Archive
COMP-1-0-0.5-1	10		10:31		1										X	
COMP-A-0-0.5	11		11:0		1								✓		X	
COMP-A-0.5-1	12		11:11		1								⊗		X	
COMP-B-0-0.5	13		10:35		1								✓		X	
COMP-B-0.5-1	14		10:36		1								✓		X	
COMP-C-0-0.5	15		10:45		1								✓		X	
COMP-C-0.5-1	16		10:46		1								✓		X	
COMP-D-0-0.5	17		10:50		1								✓		X	
COMP-D-0.5-1	18		10:51		1								✓		X	

Redemanded by:	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Received by:	<u>[Signature]</u>	<u>Krish Anderson</u>	<u>ES</u>	<u>11/13/20</u>	<u>12:01</u>
Redemanded by:	<u>[Signature]</u>	<u>Beate Casey</u>	<u>ES</u>	<u>11/13/20</u>	<u>12:14</u>
Received by:					
Samples received at _____ °C					

Fredman & Bruja, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2089
 Ph. (206) 285-8283

01267

SAMPLE CHAIN OF CUSTODY ME

11-13-20

014

Report To See page 1

Company Elkad/Snyder

Address _____

City, State, ZIP _____

Phone _____ Email _____

SAMPLER'S (signature) W. G. ...

PROJECT NAME CANTERK-TOC

REMARKS CANTERK-TOC

PO# _____

INVOICE TO _____

Project specific RI/2 - Yes / No

Page # 3 of 9

FURNAROUND TIME
O Standard turnaround
D RUSH. See 204 & 21
Ink changes authorized by:

SAMPLE DISPOSAL
 Archive samples
 Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	ETEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Notes
COMD3-2-0-0.5	19	11/13/20	1115	Soil	1								Archive
COMD3-2-0.5-1	20		1116		1								
COMD3-A-0-0.5	21		1146		1								
COMD3-A-0.5-1	22		1141		1								
COMD3-B-0-0.5	23		1125		1								
COMD3-R-0.5-1	24		1136		1								
COMD3-C-0-6.5	25		1136		1								
COMD3-C-0.5-1	26		1131		1								
COMD3-D-0-0.5	27		1135		1								
COMD3-D-0.5-1	28		1136		1								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Kristin Anderson	FS	11/13/20	1721
	Grace Loggins	FRS	11/17/20	1914
Received by:				
Received by:				
Received by:				

Friedman & Bryson, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-3029
 Ph. (206) 385-8282

Samples received at FS on 11/13/20

011267

SAMPLE CHAIN OF CUSTODY W/ 11-13-20

8:14

Report To: See pg 1
 Company: Claydon Smider
 Address: _____
 City, State, ZIP: _____
 Phone: _____ Email: _____

SAMPLERS (signature) [Signature]
 PROJECT NAME: CANTERA-TDC PO #: _____
 REMARKS: CANTERA-TDC INVOICE TO: _____
 Project specific M/P - Yes / No

Page # 4 of 9
 TURNAROUND TIME
 Standard turnaround
 Rush delivery
 Rush charges attached 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	Ariseic	TBT	Archive	Notes
COMP-3-0-0.5	29	11/13/20	1145	Soil	1								X	X		Archive
COMP-3-0.5-1	30		1146		1											
COMP4-A-0-0.5	31		1236		1											
COMP4-A-0.5-1	32		1231		1											
COMP4-B-0-0.5	33		1236		1											
COMP4-C-0-0.5	34		1240		1											
COMP4-C-0.5-1	35		1241		1											
COMP4-D-0-0.5	36		1235		1											
COMP4-D-0.5-1	37		1236		1											
COMP4-4-0-0.5	38		1240		1											

Signature: _____
 Received by: [Signature]
 Relinquished by: [Signature]
 Received by: [Signature]
 Relinquished by: [Signature]
 Received by: _____
 Relinquished by: _____

PRINT NAME: Kushin Anderson
 COMPANY: ES
 DATE: 11/13/20
 TIME: 172
 Samples received at: 5 of 0

Friedman & Brown, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 PH: (206) 235-8282

011267

SAMPLE CHAIN OF CUSTODY ME 11-13-20

014

Report To See pg 1

Company Floyd Snider

Address _____

City-State-ZIP _____

Phone _____ Email _____

SAMPLES (Signature) <u>[Signature]</u>	
PROJECT NAME	PO #
CANTEKA-FOC	
REMARKS	INVOICE TO
Project specific BLS? - Yes / No	
ANALYSES REQUESTED <input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> ARCHIVE - See BLS for any Rush charges authorized by:	
SAMPLE DISPOSAL <input checked="" type="checkbox"/> Archive samples <input type="checkbox"/> Other Default: Dispose after 30 days	

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Years	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8370	PCBs EPA 8082	Notes
COMPS-4-0.5-1	40	11/13/20	1241	soil	1								Arctic TBT Archive
COMPS-A-0-0.5	40		1300		1								X
COMPS-B-0-0.5	41		1305		1								X
COMPS-B-0.5-1	42		1306		1								X
COMPS-C-0-0.5	43		1310		1								X
COMPS-C-0.5-1	44		1311		1								X
COMPS-D-0-0.5	45		1315		1								X
COMPS-D-0.5-1	46		1316		1								X
COMPS-5-0-0.5	47		1320		1								X
COMPS-5-0.5-1	48		1321		1								X

RECEIVED BY	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	Kashin Adilina	PS	11/12/20	12:21
<u>[Signature]</u>	SPAC [Signature]	PS	11/13/20	14:16
Received by:		Samples received at	3	10

Friedmann & Bryner, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

011267

SAMPLE CHAIN OF CUSTODY IWE 4-13-20

819

Report To: See pg 1
 Company: Floyd Snider
 Address:
 City, State, ZIP:
 Phone: _____ Email: _____

SAMPLERS (signature) <u>John King</u>	PO#
PROJECT NAME <u>CANTEX-TOC</u>	INVOICE TO <u>CANTEX-TOC</u>
REMARKS	
Project specific Ref. Yes / No	

Page # 10 of 9

TURNAROUND TIME
 Standard turnaround
 RUSH (KSAW only)
 Rush charges submitted by: _____

SAMPLE DISPOSAL
 Active samples
 Other
 Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Tars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Asenic	TBT	Archive	Notes
COMPL- A-D-0.5	49		1330		1										<input checked="" type="checkbox"/>	-per KA
COMPL- A-0.5-1	50		1331		1										<input checked="" type="checkbox"/>	5/11/21 ME
COMPL- R-0-0.5	51		1340		1										<input checked="" type="checkbox"/>	
COMPL- R-0.5-1	52		1341		1										<input checked="" type="checkbox"/>	
COMPL- C-0-0.5	53		1345		1										<input checked="" type="checkbox"/>	
COMPL- C-0.5-1	54		1346		1										<input checked="" type="checkbox"/>	
COMPL- C-0.5-1-D	55		1348		1										<input checked="" type="checkbox"/>	
COMPL- D-0-0.4	56		1350		1										<input checked="" type="checkbox"/>	
COMPL- D-0-0.4-D	57		1352		1										<input checked="" type="checkbox"/>	
COMPL- 10-0-0.5	58		1355												<input checked="" type="checkbox"/>	

REQUISITIONED BY	PRINT NAME	COMPANY	DATE	TIME
Received by: <u>[Signature]</u>	Krishn Anderson		11/3/20	1721
Relinquished by: <u>[Signature]</u>	Sauri Kessig	(RS)	11/19/20	1721
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				

Samples received at: 9:00

Frederman & Bruce, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-4029
 Ph. (206) 285-8282

DIRT

SAMPLE CHAIN OF CUSTODY W/6

11-13-20

414

Page # 7 of 9

Report to See page 1
 Company Fluidd Snider
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

SAMPLERS (signature) <u>John Jones</u>	PROJECT NAME <u>CAWTEEA-TOC</u>	FO #
REMARKS	<u>CAWTEEA-TOC</u>	INVOICE TO
Project specific RI? - Yes / No		

<input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH - As soon as possible Rush charges authorized by:	Page # 7 of 9
<input checked="" type="checkbox"/> SAMPLE DISPOSAL <input type="checkbox"/> Archive samples <input type="checkbox"/> Other	Default Dispose after 90 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	FAHs EPA 8270	PCBs EPA 8082		Arsenic	TBT	Ar/As		
COMP-6-0.5-1	59	11/13/20	1357	Soil	1													
COMP-6-0.5-2-D	60		1358		1													
COMP2-A-0.5	66		1405		1													
COMP2-A-0.5-1	62		1416		1													
COMP2-B-0.5	63		1410		1													
COMP2-B-0.5-2	64		1411		1													
COMP7-C-0.5	65		1415		1													
COMP7-C-0.5-1	66		1416		1													
COMP7-D-0.5	67		1426		1													
COMP7-D-0.5	68		1425		1													

Received by: <u>[Signature]</u> Reinstigated by: <u>[Signature]</u> Received by: <u>[Signature]</u> Reinstigated by: <u>[Signature]</u>	SIGNATURE PRINT NAME <u>Kristin Anderson</u> <u>Stone Agency</u>	COMPANY <u>ES</u> <u>ES</u>	DATE <u>11/13/20</u> <u>11/11/20</u>	TIME <u>7:21</u> <u>14:24</u>
Received by: _____ Reinstigated by: _____	SIGNATURE PRINT NAME	COMPANY	DATE	TIME
Received by: _____ Reinstigated by: _____	SIGNATURE PRINT NAME	COMPANY	DATE	TIME

Friedman & Bruya, Inc.
 8012 1st Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

Received by: _____
 Reinstigated by: _____

01763

SAMPLE CHAIN OF CUSTODY MW 4-13-20

014


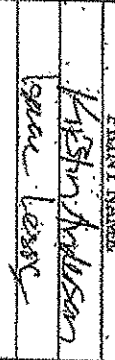
Page # 8 of 9

TURNAROUND TIME

Report To: See pg 1
Company: Haged/Snyder
Address:
City, State, ZIP:
Phone: Pinal:

SAMPLERS (signature) <i>colipin</i>	PROJECT NAME CANTECA-70c	PO # CANTECA-70c
REMARKS	INVOICE TO	
Protect specific RI? - Yes / No	ANALYSES REQUESTED	
	<input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> Expedite Analysis Rush charges authorized by:	
	<input checked="" type="checkbox"/> SAMPLE DISPOSAL <input type="checkbox"/> Archive samples <input type="checkbox"/> 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	Asenite	Cr, Cd, Pb, Ag, Zn	1631 Hg	Archive	TCLP Asenite	Notes
LOMP-7-0.5-1	69	11/13/20	1426	Soil	1											X		
SM1-0.25-0.75	70		1430		1													
SM2-0.25-0.75	71		1432		1													
SM3-0.25-0.75	72		1448		1													
SM4-0.25-0.75	73		1450		1													
SM5-0.25-0.75	74		1458		1													
SM10-0.25-0.75	75		1500		1													
SM7-0.25-0.75	76		1502		1													
SM8-0.25-0.75	77		1504		1													
SM9-0.25-0.75	78		1515		1													

Relinquished by: 	PRINT NAME Kristin Anderson	COMPANY ES	DATE 11/13/20	TIME 1921
Received by: 	PRINT NAME Grace Lewis	COMPANY FR	DATE 11/13/20	TIME 1921
Relinquished by:				
Received by:				

Friedman & Bryson, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

0126-7

SAMPLE CHAIN OF CUSTODY AND

11-13-20

014

Report to Kristin Anderson

Company Floyd Snyder

Address 100 Union Street Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-293-2881 Email Kristin.Anderson@FloydSnyder.com

SAMPLES (signature) [Signature]

PROJECT NAME CANTERA-TSC

REMARKS

PO #

INVOICE TO

Page 2 of 9

TURNAROUND TIME
 Standard turnaround
 RUSH AS ONLY 2 DAY
 Each charges indicated by:

SAMPLE DISPOSAL
 Archive samples
 Other

Default Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Cx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Notes
SND-B.25-0.75	79	11/13/20	1517	Soil	1								Asenic
B1-1.0-1.25	80		1535		1								X
B1-2.0-2.25	81		1536		1								X
B2-2.0-1.25	82		1545		1								X
B2-2.0-2.25	83		1547		1								X
B3-2.0-1.25	84		1556		1								X
B3-2.0-2.25	85		1558		1								X
B3-2.0-2.25-D	86		1554		1								X
B4-1.0-1.25	87		1610		1								X
B4-2.0-2.25	88		1612		1								X

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Retrieved by:	<u>[Signature]</u>	Kristin Anderson	FS	11/13/20	12:21		
Retrieved by:	<u>[Signature]</u>	Sara Vesiv	FS	11/19/20	14:2		
Retrieved by:							

Friedman & Bruya, Inc.
 3012 1st Avenue West
 Seattle, WA 98119-2089
 Ph. (206) 385-3282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 1, 2021

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

Dear Ms Grochala:

Included are the results from the testing of material submitted on February 22, 2021 from the Cantera-TOC, F&BI 102333 project. There are 24 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
FDS0301R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 22, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera-TOC, F&BI 102333 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
102333 -01	CAA7-S22-0-0.5
102333 -02	CAA7-S12-0-0.5
102333 -03	CAA7-S12-0.5-1
102333 -04	CAA7-S13-0-0.5
102333 -05	CAA7-S13-0.5-1
102333 -06	CAA7-S14-0-0.5
102333 -07	CAA7-S14-0.5-1
102333 -08	CAA7-S15-1-1.5
102333 -09	CAA7-S16-1-1.5
102333 -10	CAA7-S17-1-1.5
102333 -11	CAA7-S18-0-0.5
102333 -12	CAA7-S19-0-0.5
102333 -13	CAA7-S20-0-0.5
102333 -14	CAA7-S21-0-0.5
102333 -15	CAA7-B5-1-1.5
102333 -16	CAA7-B6-1-1.5
102333 -17	CAA7-B7-1-1.5
102333 -18	CAA7-B8-1-1.5
102333 -19	CAA7-S11-0-0.5
102333 -20	CAA7-S11-0.5-1

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S22-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-01
Date Analyzed:	02/25/21	Data File:	102333-01.172
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	36.5
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S12-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-02
Date Analyzed:	02/25/21	Data File:	102333-02.175
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	3.99
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S12-0.5-1	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-03
Date Analyzed:	02/25/21	Data File:	102333-03.176
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	4.01
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S13-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-04
Date Analyzed:	02/25/21	Data File:	102333-04.187
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.24
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S13-0.5-1	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-05
Date Analyzed:	02/25/21	Data File:	102333-05.188
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.04
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S14-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-06
Date Analyzed:	02/25/21	Data File:	102333-06.198
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	28.0
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S14-0.5-1	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-07
Date Analyzed:	02/25/21	Data File:	102333-07.199
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	6.02
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S15-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-08
Date Analyzed:	02/25/21	Data File:	102333-08.200
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	7.82
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S16-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-09
Date Analyzed:	02/25/21	Data File:	102333-09.201
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	30.2
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S17-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-10
Date Analyzed:	02/25/21	Data File:	102333-10.210
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	18.4
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S18-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-11
Date Analyzed:	02/25/21	Data File:	102333-11.211
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	5.40
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S19-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-12
Date Analyzed:	02/25/21	Data File:	102333-12.212
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	18.6
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S20-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-13
Date Analyzed:	02/25/21	Data File:	102333-13.213
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	5.01
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S21-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-14
Date Analyzed:	02/25/21	Data File:	102333-14.214
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	4.42
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-B5-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-15
Date Analyzed:	02/26/21	Data File:	102333-15.221
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	9.24
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-B6-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-16
Date Analyzed:	02/26/21	Data File:	102333-16.222
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	7.90
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-B7-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-17
Date Analyzed:	02/26/21	Data File:	102333-17.223
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.83
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-B8-1-1.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-18
Date Analyzed:	02/26/21	Data File:	102333-18.224
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	4.85
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S11-0-0.5	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-19
Date Analyzed:	02/26/21	Data File:	102333-19.225
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.63
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-S11-0.5-1	Client:	Floyd-Snider
Date Received:	02/22/21	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	102333-20
Date Analyzed:	02/26/21	Data File:	102333-20.226
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	4.93
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera-TOC, F&BI 102333
Date Extracted:	02/23/21	Lab ID:	I1-133 mb
Date Analyzed:	02/23/21	Data File:	I1-133 mb.077
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/01/21

Date Received: 02/22/21

Project: Cantera-TOC, F&BI 102333

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

Laboratory Code: 102333-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	32.1	0 b	112 b	75-125	200 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	107	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. 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 lowest calibration standard. 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.

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.

102333

Report To Lynn Grochala

Company Floyd/Snyder

Address 601 S Union St

City, State, ZIP Edmond WA 98026

Phone ~~253-292-2878~~ Email ~~lloyd@floyd.com~~

SAMPLE CHAIN OF CUSTODY ME 02/22/21

Page # 1 of 3

TURNAROUND TIME

Standard turnaround

RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

Archive samples

Other

Default? Dispose after 30 days

SAMPLERS (signature) L. Wainter + T. Scott

PROJECT NAME Cantera-TOC

PO #

REMARKS

Use previous

INVOICE TO

Project specific RI's? - Yes / No

ANALYSES REQUESTED

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		Tot Arsenic	
CAA7-S11-0.5-1	01	2/22	10:00	Soil	1										
CAA7-S12-0-0.5	01	2/22	10:00	Soil	1								X		
CAA7-S12-0.5-1			10:05										X		
CAA7-S12-0-0.5	02		10:15										X		
CAA7-S12-0.5-1	03		10:20										X		
CAA7-S13-0-0.5	04		10:25										X		
CAA7-S13-0.5-1	05		10:35										X		
CAA7-S14-0-0.5	06		10:50										X		
CAA7-S14-0-D.5	06		10:50										X		
CAA7-S14-0.5-1	07		10:55										X		
CAA7-S15-1-1.5	08		11:35										X		

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by: [Signature]

Tyler Scott

ISS

2/22/21 16:04

Received by: [Signature]

HONG NGUYEN

FBI

✓

Relinquished by:

Received by:

Samples received at 4°C

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

102333

SAMPLE CHAIN OF CUSTODY

ME 02/22/21

BIY

Page # 2 of 3

Report to _____

Company FIS

Address 601 Union St

City, State, ZIP Seattle WA 98001

Phone 206-292-2646 Email _____

SAMPLERS (signature) L. Waagner + T. Scott
PROJECT NAME Container - TAC
PO # _____

REMARKS _____
INVOICE TO _____
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	Tot Arsenic					
CAA7-S16-1-1.5	09	2/22	12:20	Soil	1													
CAA7-S17-1-1.5	10		12:30		1													
CAA7-S18-0-0.5	11		12:45		1													
CAA7-S19-0-0.5	12		12:55		1													
CAA7-S20-0-0.5	13		13:10		1													
CAA7-S21-0-0.5	14		13:15		1													
CAA7-B5-1-1.5	15		13:30		1													
CAA7-B6-1-1.5	16		13:35		1													
CAA7-B7-1-1.5	17		14:00		1													
CAA7-B8-1-1.5	18		14:30		1													

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <u>[Signature]</u>	<u>Tyler Scott</u>			FIS	2/22/21	16:04	
Received by: <u>[Signature]</u>	<u>HONZ NGUYEN</u>			FBI			
Relinquished by: _____							
Received by: _____				Samples received at			

Friedman & Bruyca, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

102333

SAMPLE CHAIN OF CUSTODY ME 02/22/21

Page # 3 of 3

Report To _____

Company _____

Address _____

City, State, ZIP _____

Phone _____ Email _____

SAMPLERS (signature) LW+TS

PROJECT NAME PO #

Center-Tok

REMARKS INVOICE TO

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								
CA#7-S11-0-0.5	19	2/22	1515	S11	1															
CA#7-S11-0.5-1	20	2/22	1520	S	1										X					

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<i>[Signature]</i>	Tyler Scott	FS	2/22/21	16:04
<i>[Signature]</i>	HONG NGUYEN	FBI		
Received by:				
Relinquished by:				
Received by:		Samples received at		4:00

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 26, 2021

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

Dear Ms Grochala:

Included are the results from the testing of material submitted on March 22, 2021 from the Cantera-TOC, F&BI 103414 project. There are 10 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
FDS0326R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 22, 2021 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera-TOC, F&BI 103414 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
103414 -01	CAA7-B12-2.0-2.25
103414 -02	CAA7-B11-2.0-2.25
103414 -03	CAA7-SW23-0.0-0.5
103414 -04	CAA7-SW24-0.0-0.5
103414 -05	CAA7-SW25-0.0-0.5
103414 -06	CAA7-SW26-0.0-0.5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-B12-2.0-2.25	Client:	Floyd-Snider
Date Received:	03/22/21	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	103414-01
Date Analyzed:	03/24/21	Data File:	103414-01.059
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.80
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-B11-2.0-2.25	Client:	Floyd-Snider
Date Received:	03/22/21	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	103414-02
Date Analyzed:	03/24/21	Data File:	103414-02.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	6.54
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-SW23-0.0-0.5	Client:	Floyd-Snider
Date Received:	03/22/21	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	103414-03
Date Analyzed:	03/24/21	Data File:	103414-03.061
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	10.8
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-SW24-0.0-0.5	Client:	Floyd-Snider
Date Received:	03/22/21	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	103414-04
Date Analyzed:	03/24/21	Data File:	103414-04.093
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	13.3
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-SW25-0.0-0.5	Client:	Floyd-Snider
Date Received:	03/22/21	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	103414-05
Date Analyzed:	03/24/21	Data File:	103414-05.094
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	6.39
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CAA7-SW26-0.0-0.5	Client:	Floyd-Snider
Date Received:	03/22/21	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	103414-06
Date Analyzed:	03/24/21	Data File:	103414-06.095
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	13.6
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera-TOC, F&BI 103414
Date Extracted:	03/23/21	Lab ID:	I1-182 mb2
Date Analyzed:	03/23/21	Data File:	I1-182 mb2.107
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/21

Date Received: 03/22/21

Project: Cantera-TOC, F&BI 103414

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

Laboratory Code: 103386-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	11.3	111	116	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	109	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. 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 lowest calibration standard. 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.

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.

103414

SAMPLE CHAIN OF CUSTODY

03-22-21

Page # B12-1 of 1

Report To Lynn Grochala

Company Floyd Snider

Address 601 Union St Ste 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2378 email lynn.grochala@floydsnider.com

SAMPLERS (signature) 

PROJECT NAME Antenna - TOR

PO # 

REMARKS

INVOICE TO

Project specific RIs? - Yes / No No

TURNAROUND TIME

Standard turnaround

RUSH

Rush charges authorized by: _____

SAMPLE DISPOSAL

Archive samples

Other _____

Default: Dispose after 30 days

Floydsnider.com

ANALYSES REQUESTED

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	Arsenic					
CAA7-B12-20-225	01	3-22-21	1500	Soil	1													
CAA7-B11-20-225	02		1545															
CAA7-SW23-0-0-05	03		1610															
CAA7-SW24-0-0-05	04		1625															
CAA7-SW25-0-0-05	05		1640															
CAA7-SW26-0-0-05	06		1705															
Samples received at 2 °C																		

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Relinquished by:



Lynn Grochala

FS

3/22/21

1737

Received by:



TOE MOHAMMED

FBBI

3/21/21

1737

Relinquished by:



TOE MOHAMMED

FBBI

3/21/21

1737

Friedman & Bruya, Inc.
 3012 16th Avenue West
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