SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

July 7, 2020

Mr. John Guenther, LHG
Washington State Department of Ecology
Bellingham Field Office
913 Squalicum Way, Unit 101
Bellingham, Washington 98225

**SUBJECT: WESMAR COMPANY INC. SITE—YEAR 1 SECOND QUARTERLY GROUNDWATER MONITORING EVENT: FIRST QUARTER 2020**
**Former Wesmar Company, Inc.**
**(Ballard Blocks II Property)**
**1401 and 1451 Northwest 46th Street**
**Seattle, Washington**
**Project No. 1249-001-06**

Dear Mr. Guenther:

On behalf of Block at Ballard II, LLC, SoundEarth Strategies, Inc. (SoundEarth) prepared this subgrade drainage groundwater monitoring report to provide a summary of the results for the second long-term groundwater monitoring event performed for Year 1 in First Quarter 2020 at the Former Wesmar Company, Inc. Site (the Site), also identified as Ballard Blocks II, in Seattle, Washington.

The Site is located at 1401 and 1451 Northwest 46th Street in Seattle, Washington. Operation and monitoring of the permanent subgrade drainage discharge water treatment system associated with the recently completed development of the Property began in October 2019.

The work was performed pursuant to the requirements of the October 20, 2017, First Amended Consent Decree (No. DE 10-2-21304-0 SEA; Consent Decree) between Block at Ballard II, LLC and the Washington State Department of Ecology (Ecology).

## SUBGRADE DRAINAGE GOUNDWATER MONITORING

The approximate location of the subgrade groundwater collection sump and the arsenic water treatment system located in the basement of the parking garage on the Site are shown on Figure 1. Water monitoring analytical results pertaining to the subgrade discharge water and the permanent arsenic treatment system are summarized in Tables 1 and 2.

## SAMPLING METHODOLOGY

The following section describes the sampling methodology employed during the subgrade drainage water quality monitoring activities and the permanent arsenic treatment system performance monitoring activities performed at the Site in First Quarter 2020.

**January Through March 2020 Permanent Arsenic Treatment System Performance Monitoring Events**

Subgrade drainage pipes under the building on the Site drain water to a sump by gravity feed in the basement parking garage in the southeastern portion of the Site (Figure 1).

Monthly permanent arsenic treatment system performance monitoring activities were performed on January 23, February 20, and March 19, 2020.

During these monitoring events, water samples were collected from a pre-treatment influent water port (INF), located immediately ahead of the two arsenic-targeting media treatment vessels; a mid-treatment system monitoring port (MID), located between the two arsenic-targeting media treatment vessels; and a post-treatment effluent water monitoring port (EFF), located immediately downstream of the permanent arsenic-treatment system prior to discharge to the municipal stormwater system. The approximate locations of these three water monitoring ports (INF, MID, and EFF) are shown on the general design schematic of the treatment system in Attachment A.

Water samples were collected directly into clean, laboratory-prepared sample containers. Each container was labeled with a unique sample identification number, the date and time sampled and project number; placed on ice in a cooler; and transported to Friedman & Bruya, Inc. (F&B) under standard chain-of-custody protocols for laboratory analysis.

**First Quarter 2020 Subgrade Drainage Groundwater Monitoring Event**

A subgrade drainage groundwater sample was collected from the subgrade groundwater collection sump inlet pipes on January 23, 2020. A description of the sampling methodology is provided below.

A flow-weighted sample from the subgrade groundwater drainage system was collected directly from the sub-slab drainage outlet pipes located within the sump (Figure 1).

Outlet pipes draining into the subgrade groundwater collection sump from the subgrade drainage system include one pipe on the north side, a lower pipe on the east side, an upper pipe on the east side, and one pipe on the south side of the sump. During the monitoring event on January 23, 2020, water was observed flowing from the pipe on the north side pipe and the lower pipe on the east side of the subgrade groundwater collection sump. SoundEarth did not observe water flowing from the pipe on the south side pipe or the upper pipe on the east side of the subgrade groundwater collection sump.

Average flow rates were measured for each outlet pipe producing water from the sub-slab drainage system on January 23, 2020. The water volume collected for analysis was collected from each pipe proportionate to the flow rate of water for the pipe entering the sump. The total water flow rate into the subgrade sump during the monitoring event on January 23, 2020, was approximately 0.5 gallons per minute.

The water sample was collected directly into clean, laboratory-prepared sample containers. Each container was labeled with a unique sample identification number, the date and time sampled, and project number; placed on ice in a cooler; and transported to F&B under standard chain-of-custody protocols for laboratory analysis.

## ANALYTICAL RESULTS

Water samples submitted for laboratory analysis were analyzed by US Environmental Protection Agency Method 200.8 for total arsenic.

Water quality analytical results for the permanent arsenic treatment system performance monitoring activities are summarized below and on Table 1. Analytical results for total arsenic for groundwater samples collected from the subgrade drainage system are summarized below and on Table 2. Laboratory analytical reports are included in Attachment B.

### January Through March 2020 Permanent Arsenic Treatment System Performance Monitoring Events

Total arsenic concentrations in post-treatment effluent water (sample IDs: 1249_GW_EFF_20200123, 1249_GW_EFF_20200220 and 1249_GW_EFF_20200319) following treatment through the permanent arsenic treatment system, were not detected at concentrations above the laboratory reporting limit of 1 microgram per liter (µg/L) during treatment system performance monitoring events on January 23, February 20, and March 19, 2020. The laboratory reporting limit of 1 µg/L was below the MTCA Method A cleanup level for groundwater of 5 µg/L.

### First Quarter 2020 Subgrade Drainage Groundwater Monitoring Event

The First Quarter 2020 result for the flow-weighted water sample collected from the subgrade groundwater drainage system (sample ID: 1249_SSGW_20200123) on January 23, 2020, prior to treatment through the permanent arsenic treatment system, revealed a result of 15.4 µg/L, above the MTCA Method A cleanup level of 5 µg/L.

The post-treatment effluent water, collected on January 23, 2020, following treatment of the collected subgrade drainage water through the permanent arsenic treatment system (sample ID: 1249_GW_EFF_20200123) revealed a result of less than 1 µg/L, compliant with MTCA Method A cleanup level for arsenic in groundwater of 5 µg/L for post-treatment effluent discharge water.

## SUMMARY OF FINDINGS AND CONCLUSIONS

Relying on the results of analytic testing, the permanent arsenic treatment system is performing as designed and effectively treating concentrations of total arsenic in subgrade discharge water in compliance with the Consent Decree. Concentrations of arsenic in post-treatment subgrade discharge water were compliant with the MTCA Method A cleanup level of 5 µg/L.

Long-term groundwater monitoring is planned to continue as outlined in the Revised Cleanup Action Plan of the Consent Decree.

## LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report are derived, in part, from data gathered by others, and from conditions evaluated when services were performed, and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We do not warrant and are not responsible for the accuracy or validity of work performed by others, nor from the impacts of changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the use of segregated portions of this report.

Respectfully,
**SoundEarth Strategies, Inc.**


Chris G. Cass, LG
Associate Geologist

Chris M. Carter
Managing Principal

Attachments: Figure 1, Arsenic Treatment System Basement Location Map
Table 1, Summary of Influent, Mid-Treatment, and Effluent Water Analytical Results for Total Arsenic
Table 2, Summary of Groundwater Analytical Results for Raw Pre-Treatment Subgrade Water Control System Water
A, Basic Conceptual Drawing of Permanent Arsenic Treatment System
B, Laboratory Analytical Reports
*Friedman & Bruya, Inc. #001340*
*Friedman & Bruya, Inc. #001341*
*Friedman & Bruya, Inc. #002316*

cc: Eric Silvers, Regency Centers Corporation

JSL/CGC:dnm

# FIGURE

11/19/2019

P:\1249 REGENCY CENTERS\1249-001 WESMAR\TECHNICAL\CAD\2019\2019 PERMANENT AS TREATMENT SYSTEM\1249-001_2019 AS-BASE.DWG

UNDERSLAB DRAINAGE (TYP)

BASEMENT PARKING GARAGE INGRESS/EGRESS RAMP

CO IE=13.33

CO IE=15.33

CO IE=11.33

LEVEL P1
FF ELEV. 15.33

LOT B
UNDER SEPARATE BUILDING PERMIT #6583435

LOT C
UNDER SEPARATE BUILDING PERMIT #6583437

4" PERF. PIPE @ S=0.5 MIN. (TYP.)

8" SD POC
IE = 23.98

TYPE 1 CB
W/ SOLID COVER
RIM = 15.33
4" IE =10.33
6" IE =10.33

SUMP AND PUMP TO SD POC PER MEP

CO IE=12.58

CO IE=11.78

CO IE=10.90

CO IE=11.00

CO IE=10.40

CO IE=12.33

STORMWATER COLLECTION SUMP (CIRCULAR LID)

SUBGRADE GROUNDWATER COLLECTION SUMP (INLET PIPES FROM SUBGRADE WATER CONTROL SYSTEM) PRIOR TO TREATMENT SYSTEM (SQUARE LID)

LOCATION OF BASEMENT ARSENIC WATER TREATMENT SYSTEM

SHILSHOLE AVENUE

NW 45TH STREET

N

0 20 40

APPROXIMATE SCALE IN FEET

## LEGEND

PROPERTY BOUNDARY

**NOTES:**

BASEMAP PROVIDED BY WEBER THOMPSON/KPFF, 2018.

SoundEarth Strategies

WWW.SOUNDEARTHINC.COM

FORMER WESMAR COMPANY, INC.
(BALLARD BLOCKS II PROPERTY)
1401 AND 1451
NORTHWEST 46TH STREET
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1249-001

**FIGURE 1**
ARSENIC TREATMENT SYSTEM
BASEMENT LOCATION MAP

# TABLES

**Table 1**
**Summary of Influent, Mid-Treatment, and Effluent Water Analytical Results for Total Arsenic**
**Former Wesmar Company, Inc.**
**(Ballard Blocks II Property)**
**1401 and 1451 Northwest 46th Street**
**Seattle, Washington**

| Sample IDs | Date Sampled | Pre-Treatment Influent Water Total Arsenic Analytical Results[1] (micrograms per liter) | Mid-Treatment System Total Arsenic Analytical Results[1] (micrograms per liter) | Treated Effluent Water Total Arsenic Analytical Results[1] (micrograms per liter) |
|---|---|---|---|---|
| **Permanent Arsenic Treatment System Maintenance Water Quality Monitoring Results** | | | | |
| 1249_GW_INF/MID/EFF_20191121 | 11/21/19 | 9.58 | 2.43 | <1 |
| 1249_GW_INF/MID/EFF_20191226 | 12/26/19 | 9.25 | 3.31 | <1 |
| 1249_GW_INF/MID/EFF_20200123 | 01/23/20 | 12.50 | 7.21 | <1 |
| 1249_GW_INF/MID/EFF_20200220 | 02/20/20 | 9.88 | 5.78 | <1 |
| 1249_GW_INF/MID/EFF_20200319 | 03/19/20 | 8.83 | 4.04 | <1 |
| **MTCA Cleanup Level for Groundwater** | | -- | -- | **5**[2] |

NOTES:

Sample analyses conducted by Friedman & Bruya, Inc. of Seattle, Washington.

[1]Samples analyzed by EPA Method 200.8.

[2]MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

< = not detected at a concentration exceeding the laboratory reporting limit

-- = not applicable

EPA = US Environmental Protection Agency

GPM = gallons per minute

MTCA = Washington State Model Toxics Control Act

WAC = Washington Administrative Code

**Table 2**
**Summary of Groundwater Analytical Results for Raw Pre-Treatment Subgrade Water Control System Water**
**Former Wesmar Company, Inc.**
**(Ballard Blocks II Property)**
**1401 and 1451 Northwest 46th Street**
**Seattle, Washington**

| Sample ID | Date Sampled | Average Estimated Total Water Flow Rate Into Subgrade Sump (GPM) | Total Arsenic Analytical Results for Raw Subgrade Drainage Groundwater [1] (micrograms per liter) |
|---|---|---|---|
| 1249_SSGW_20191121 | 11/21/19 | 0.7 | **8.69** |
| 1249_SSGW_20200123 | 01/23/20 | 0.5 | **15.4** |
| **MTCA Cleanup Level for Groundwater** | | | **5**[2] |

NOTES:

**Red** denotes concentration exceeds MTCA cleanup level for groundwater.

Sample analyses conducted by Friedman & Bruya, Inc. of Seattle, Washington.

[1]Samples analyzed by EPA Method 200.8.

[2]MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

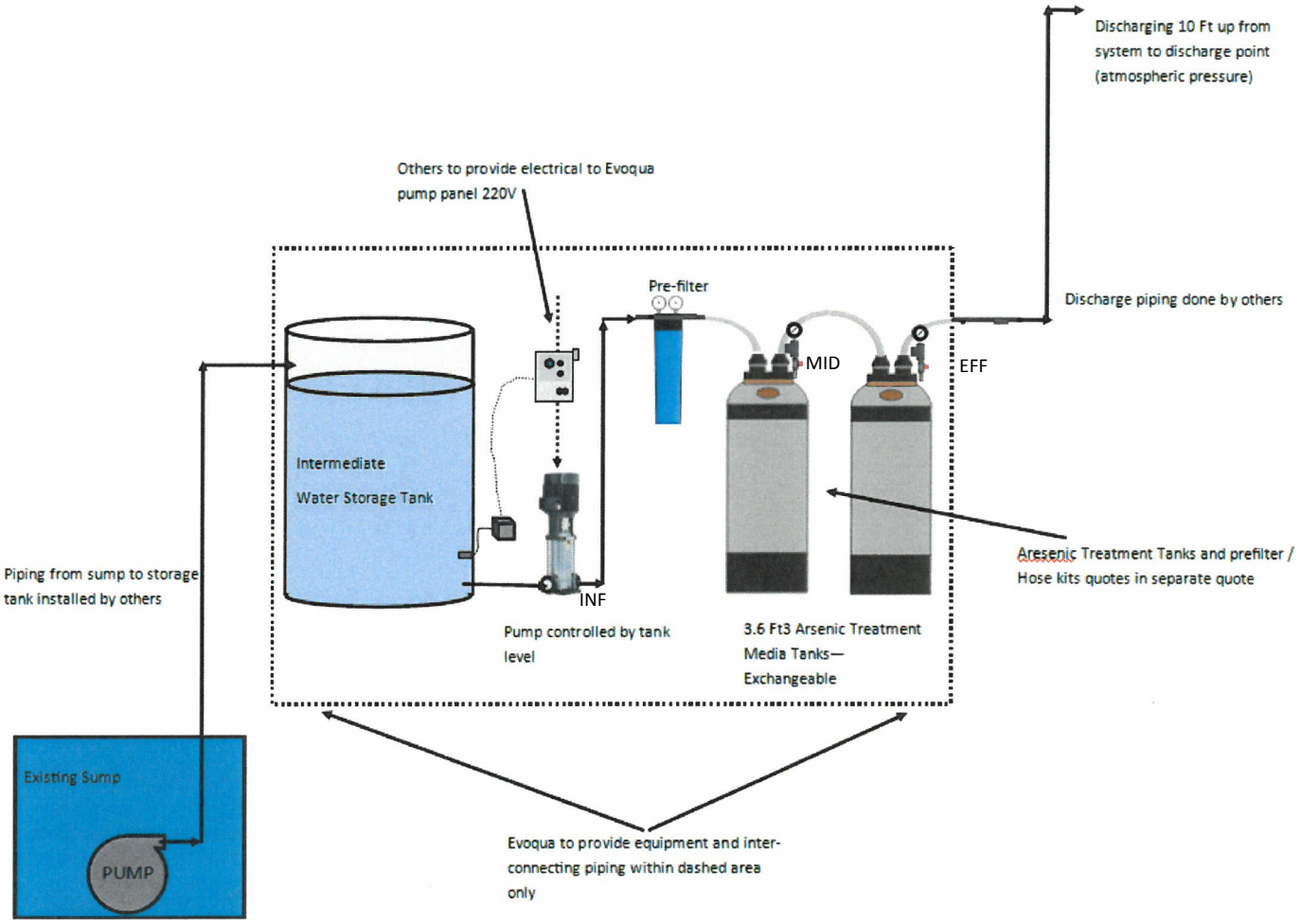
EPA = US Environmental Protection Agency

GPM = gallons per minute

MTCA = Washington State Model Toxics Control Act

WAC = Washington Administrative Code

# ATTACHMENT A
# BASIC CONCEPTUAL DRAWING OF PERMANENT ARSENIC TREATMENT SYSTEM




**LEGEND**
INF - Pre-treatment System Monitoring Port
MID - Mid-treatment System Monitoring Port
EFF - Post-treatment Effluent Water Monitoring Port

# ATTACHMENT B
# LABORATORY ANALYTICAL REPORTS

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

January 30, 2020

Chris Cass, Project Manager
SoundEarth Strategies
2811 Fairview Ave. East, Suite 2000
Seattle, WA 98102

Dear Mr Cass:

Included are the results from the testing of material submitted on January 24, 2020 from the SOU_ 1249-001-06_ 20200124, F&BI 001340 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: Chris Carter, Jonathan Loeffler
SOU0130R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 24, 2020 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU_ 1249-001-06_ 20200124, F&BI 001340 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | SoundEarth Strategies |
|---|---|
| 001340 -01 | 1249_GW_INF_20200123 |
| 001340 -02 | 1249_GW_MID_20200123 |
| 001340 -03 | 1249_GW_EFF_20200123 |

All quality control requirements were acceptable.

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_GW_INF_20200123 | Client: | SoundEarth Strategies |
| Date Received: | 01/24/20 | Project: | SOU_ 1249-001-06_ 20200124 |
| Date Extracted: | 01/27/20 | Lab ID: | 001340-01 |
| Date Analyzed: | 01/27/20 | Data File: | 001340-01.067 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | 12.5 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_GW_MID_20200123 | Client: | SoundEarth Strategies |
| Date Received: | 01/24/20 | Project: | SOU_ 1249-001-06_ 20200124 |
| Date Extracted: | 01/27/20 | Lab ID: | 001340-02 |
| Date Analyzed: | 01/27/20 | Data File: | 001340-02.068 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | 7.21 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_GW_EFF_20200123 | Client: | SoundEarth Strategies |
| Date Received: | 01/24/20 | Project: | SOU_ 1249-001-06_ 20200124 |
| Date Extracted: | 01/27/20 | Lab ID: | 001340-03 |
| Date Analyzed: | 01/27/20 | Data File: | 001340-03.069 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | SoundEarth Strategies |
| Date Received: | Not Applicable | Project: | SOU_ 1249-001-06_ 20200124 |
| Date Extracted: | 01/27/20 | Lab ID: | I0-055 mb |
| Date Analyzed: | 01/27/20 | Data File: | I0-055 mb.097 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | <1 |

Date of Report: 01/30/20
Date Received: 01/24/20
Project: SOU_ 1249-001-06_ 20200124, F&BI 001340

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 001341-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 15.4 | 98 | 94 | 70-130 | 4 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 100 | 85-115 |

# 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.

001340

# SAMPLE CHAIN OF CUSTODY ME 01-24-20 AI3

Page # 1 of 1

Send ~~Report to Chris~~ Cass; Chris Carter; Jonathan Loeffler

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS *(signature)*

| PROJECT NAME/NO. | PO # |
|---|---|
| Ballard Blocks II Property; Arsenic Treatment System Water Sampling | 1249-001-06 |

REMARKS

TURNAROUND TIME
Standard (2 Weeks)
RUSH ~~24 hr 48 hr~~ 5-DAY TAT
Rush charges authorized by: JJ
Chris Cass

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

| Sample ID | Sample Location | Sample Depth | Lab ID | Date Sampled | Time Sampled | Matrix | # of Jars | ANALYSES REQUESTED: Total Arsenic (200.8) | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1249_GW_INF_20200123 | Influent | N/A | 01 | 1/23/20 | 1610 | WATER | 1 | X | | | | | $HNO_3$ preserved |
| 1249_GW_MID_20200123 | Mid-Treatment | N/A | 02 | 1/23/20 | 1605 | WATER | 1 | X | | | | | $HNO_3$ preserved |
| 1249_GW_EFF_20200123 | Effluent | N/A | 03 | 1/23/20 | 1600 | WATER | 1 | X | | | | | $HNO_3$ preserved |

1/23/20

Samples received at 3 °C

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: | JONATHAN LOEFFLER | SOUNDEARTH | 1/24/20 | |
| Received by: | COREY SMITH | FEDEX | 1/24 | 9:18 |
| Relinquished by: | | | | |
| Received by: | DO VO | FXBI | 1-24-20 | 10.AM |

SoundEarth Strategies

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
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fbi@isomedia.com
www.friedmanandbruya.com

January 30, 2020

Chris Carter, Project Manager
SoundEarth Strategies
2811 Fairview Ave. East, Suite 2000
Seattle, WA 98102

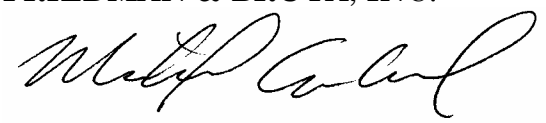
Dear Mr Carter:

Included are the results from the testing of material submitted on January 24, 2020 from the SOU_1249-001-06_ 20200124, F&BI 001341 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Chris Carter, Jonathan Loeffler
SOU0130R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 24, 2020 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU_1249-001-06_ 20200124, F&BI 001341 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | SoundEarth Strategies |
|---|---|
| 001341 -01 | 1249_SSGW_20200123 |

All quality control requirements were acceptable.

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_SSGW_20200123 | Client: | SoundEarth Strategies |
| Date Received: | 01/24/20 | Project: | SOU_1249-001-06_ 20200124 |
| Date Extracted: | 01/27/20 | Lab ID: | 001341-01 |
| Date Analyzed: | 01/27/20 | Data File: | 001341-01.099 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | 15.4 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | SoundEarth Strategies |
| Date Received: | Not Applicable | Project: | SOU_1249-001-06_ 20200124 |
| Date Extracted: | 01/27/20 | Lab ID: | I0-055 mb |
| Date Analyzed: | 01/27/20 | Data File: | I0-055 mb.097 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | <1 |

Date of Report: 01/30/20
Date Received: 01/24/20
Project: SOU_1249-001-06_ 20200124, F&BI 001341

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 001341-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 15.4 | 98 | 94 | 70-130 | 4 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 100 | 85-115 |

# Data Qualifiers & Definitions

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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.

J01341

# SAMPLE CHAIN OF CUSTODY ME 01-24-20 AI1

Send Report to Chris Cass; Chris Carter; Jonathan Loeffler

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS *(signature)*

| PROJECT NAME/NO. | PO # |
|---|---|
| Ballard Blocks II Property – Subgrade Groundwater Monitoring | 1249-001-06 / 210 |

REMARKS



TURNAROUND TIME
(Standard (2 Weeks))
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

| Sample ID | Sample Location | Sample Depth | Lab ID | Date Sampled | Time Sampled | Matrix | # of Jars | ANALYSES REQUESTED: Total As (200.8) | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1249_SSGW_20200123 | Sub slab GW | N/A | 01 | 1/23/20 | 1425 | WATER | 1 | X | | | | | $HNO_3$ preserved |

1/23/20

Samples received at 3 °C

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: | JONATHAN LOEFFLER | SOUNDEARTH | 1/24/20 | |
| Received by: | COREY SMITH | FEDEX | 1/24 | 9:18 |
| Relinquished by: | | | | |
| Received by: | DO VO | FBI | 1-24-20 | 10:00 |

SoundEarth Strategies

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 2, 2020

Chris Cass, Project Manager
SoundEarth Strategies
2811 Fairview Ave. East, Suite 2000
Seattle, WA 98102

Dear Mr Cass:

Included are the results from the testing of material submitted on February 21, 2020 from the SOU_1249-001-06_ 20200221, F&BI 002316 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: Chris Carter, Jonathan Loeffler
SOU0302R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 21, 2020 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU_1249-001-06_ 20200221, F&BI 002316 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | SoundEarth Strategies |
|---|---|
| 002316 -01 | 1249_GW_INF_20200220 |
| 002316 -02 | 1249_GW_MID_20200220 |
| 002316 -03 | 1249_GW_EFF_20200220 |

All quality control requirements were acceptable.

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_GW_INF_20200220 | Client: | SoundEarth Strategies |
| Date Received: | 02/21/20 | Project: | SOU_1249-001-06_ 20200221 |
| Date Extracted: | 02/25/20 | Lab ID: | 002316-01 |
| Date Analyzed: | 02/25/20 | Data File: | 002316-01.098 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | 9.88 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_GW_MID_20200220 | Client: | SoundEarth Strategies |
| Date Received: | 02/21/20 | Project: | SOU_1249-001-06_ 20200221 |
| Date Extracted: | 02/25/20 | Lab ID: | 002316-02 |
| Date Analyzed: | 02/25/20 | Data File: | 002316-02.101 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | 5.78 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | 1249_GW_EFF_20200220 | Client: | SoundEarth Strategies |
| Date Received: | 02/21/20 | Project: | SOU_1249-001-06_ 20200221 |
| Date Extracted: | 02/25/20 | Lab ID: | 002316-03 |
| Date Analyzed: | 02/25/20 | Data File: | 002316-03.102 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | SoundEarth Strategies |
| Date Received: | Not Applicable | Project: | SOU_1249-001-06_ 20200221 |
| Date Extracted: | 02/25/20 | Lab ID: | I0-111 mb |
| Date Analyzed: | 02/25/20 | Data File: | I0-111 mb.096 |
| Matrix: | Water | Instrument: | ICPMS2 |
| Units: | ug/L (ppb) | Operator: | SP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | <1 |

Date of Report: 03/02/20
Date Received: 02/21/20
Project: SOU_1249-001-06_ 20200221, F&BI 002316

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 002316-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 9.88 | 101 | 96 | 70-130 | 5 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 100 | 85-115 |

# 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.

# SAMPLE CHAIN OF CUSTODY ME 2/21/20 AI 4

002316

Send Reports to Chris Cass; Chris Carter; Jonathan Loeffler

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature)

PROJECT NAME/NO. | PO #

Ballard Blocks II Property; Arsenic Treatment System Water Sampling | 1249-001-06

REMARKS

Page # 1 of 1

TURNAROUND TIME
Standard (2 Weeks)
RUSH ~~2 day~~ 5 day TAT
Rush charges authorized by: Chris Cass

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

| Sample ID | Sample Location | Sample Depth | Lab ID | Date Sampled | Time Sampled | Matrix | # of Jars | ANALYSES REQUESTED: Total Arsenic (200.8) | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1249_GW_INF_20200220 | Influent | N/A | -01 | 2/20/20 | 1350 | WATER | 1 | X | | | | | $HNO_3$ preserved |
| 1249_GW_MID_20200220 | Mid-Treatment | N/A | -02 | 2/20/20 | 1345 | WATER | 1 | X | | | | | $HNO_3$ preserved |
| 1249_GW_EFF_20200220 | Effluent | N/A | -03 | 2/20/20 | 1340 | WATER | 1 | X | | | | | $HNO_3$ preserved |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

~~Samples received at~~ 4 °C

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: | JONATHAN LOEFFLER | SOUNDEARTH | 2/21/20 | 1500 |
| Received by: | HONG NGUYEN | FBI | V | V |
| Relinquished by: | | | | |
| Received by: | | | | |

SoundEarth Strategies