MADRONA
ENVIRONMENTAL
CONSULTING, LLC

TECHNICAL MEMORANDUM

DATE: May 8, 2025

TO: Chris DeBoer, Washington State Department of Ecology (email)

CC: Thomas Finnerty, Pacific Topsoils, Inc., and Luke Thies, Weyerhaeuser Company (email)

FROM: Timothy S. Brown, LHG, Madrona Environmental Consulting, LLC

RE: **Former Mill E / Koppers Facility**
2024 Annual Performance and Compliance Monitoring Report

Madrona Environmental Consulting, LLC (MEC) performed the 2024 annual performance and compliance monitoring for the Former Mill E / Koppers Facility (Site) in Everett, Washington on October 29, 2024 in accordance with the Performance and Compliance Monitoring Plan by EMCON (PCMP; EMCON, 1998) as part of the Consent Decree No. 98-2-08718-6 by the Washington State Department of Ecology (Ecology) (Consent Decree; Ecology, 1998A), and the Performance and Compliance Monitoring Plan Addendum (PCMP Addendum; Floyd | Snider, 2017).

Based on recommendations in the Former Mill E/Koppers Facility 2020 Annual Performance and Compliance Monitoring Report dated November 11, 2020 (2020 Annual Monitoring Report; Floyd | Snider, 2020), and communications with Pacific Topsoils, Inc., the annual monitoring was performed in October instead of September to increase the likelihood that monitored piezometers will have measurable water. The most recent annual results are presented in 2023 Annual Performance and Compliance Monitoring Report dated February 27, 2024 (Kane Environmental, Inc., 2023).

The Site is located on the east side of Riverside Road and south of 8th Street in Riverside Business Park within Everett, Washington (Figure 1). Figure 2 presents a Site plan showing locations of piezometers and monitoring wells that were part of this monitoring event.

Monitoring activities performed during the 2024 annual performance and compliance monitoring included annual groundwater quality monitoring of well PZ-3A, annual groundwater level monitoring, and annual asphalt and soil cap inspection monitoring. The sections below present the results for this annual monitoring event.

GROUNDWATER LEVEL MONITORING

MEC performed annual groundwater monitoring at the Site on October 29, 2024. During the October 2024 monitoring event, water levels were measured in the three Upper Sand Aquifer piezometers inside the barrier wall (PZ-1A, PZ-2A, and PZ-3A), three piezometers outside the barrier wall screened in the Upper Sand Aquifer (PZ-1B, PZ-2B, and PZ-3B), and three wells/piezometers located outside the barrier wall and screened in the Lower Sand Aquifer (MW-10D, PZ-2D, and LLMW-20D). A Site plan showing the approximate well locations and

groundwater elevations in feet relative to North American Vertical Datum of 1988, and the approximate timing of the measurements relative to the 24-hour tidal cycle is presented on Figure 2.

The groundwater levels were collected within 2 hours of the daytime low tide, consistent with Section 2.1 of the PCMP Addendum. A summary of groundwater elevation measurements for October 2024 are presented in Table 1. Daytime low tide (3.74 feet elevation) was at 9:30 am on October 29, 2024, based on the National Oceanic and Atmospheric Administration tide chart for Everett, Washington (Station 9447659).

The piezometers/wells were opened to provide for water levels to equilibrate with atmospheric pressure before obtaining depth-to-water measurements. Water levels were measured relative to the top of casing to an accuracy of 0.01 feet using an electronic water level indicator. The electronic water level indicator was cleaned using an Alconox® wash and distilled water rinse prior to each groundwater level measurement.

Elevations for the top of well casing for the six Upper Sand Aquifer piezometers and three Lower Sand Aquifer wells were referenced from the 2020 Annual Monitoring Report (Floyd | Snider, 2020). The 2020 Annual Monitoring Report states the monitoring wells and piezometers were surveyed on September 10, 2020 by Alpha Subdivision Pro's, Inc.

HYDRAULIC HEAD DIFFERENCE COMPARISON

Groundwater elevations were used to calculate vertical and horizontal hydraulic head differences inside and outside the barrier wall as the primary indicator of the barrier wall's performance to control the hydraulic movement of contaminants. As indicated in the PCMP Addendum, the Site's piezometers are referred to as pairs and triplets (PCMP Addendum; Floyd | Snider, 2017). The piezometer pairs consist of one piezometer inside the barrier wall (PZ-#A) and one piezometer outside the barrier wall (PZ-#B), both in the Upper Sand Aquifer, in the same vicinity. The piezometer triplets consist of one piezometer pair and one well or piezometer outside the barrier wall (MW-#D, LLMW-#D or PZ-#D) representative of the Lower Sand Aquifer for that vicinity.

Horizontal head differences were calculated by taking the Upper Sand Aquifer piezometer groundwater elevation from inside the barrier wall and comparing to the Upper Sand Aquifer piezometer groundwater elevation from outside the barrier wall within the same vicinity. Horizontal head differences for 2024 are presented in Table 2. The groundwater elevation of the Upper Sand Aquifer inside the barrier wall was lower than the groundwater elevation outside the barrier wall for the three piezometer pairs. The lower groundwater elevation inside the barrier wall indicates a positive horizontal head difference with groundwater fluxing inward through the barrier wall.

Vertical head differences were calculated by taking the Upper Sand Aquifer groundwater elevations from both inside and outside of the barrier wall and comparing to the Lower Sand Aquifer groundwater elevations for each piezometer triplet. Vertical head differences for 2024 are presented in Table 3. The vertical head difference inside the barrier wall was lower than the vertical head difference outside the barrier wall at the three piezometer pair locations. The lower vertical head inside the barrier wall indicates the barrier wall and asphalt cap are functioning as

intended by limiting the downward flux of groundwater inside the barrier wall through the Upper Silt Aquitard.

Groundwater elevation trends for each piezometer pair are presented on Figures 3 through 5 and show a comparison of historical groundwater elevation data from 2014 to 2024. Review of the data indicates the groundwater elevations outside of the barrier wall are higher than inside the barrier wall with the exception for piezometer PZ-3B in September 2015 and in October and November 2022. As part of the data review, MEC discovered the groundwater elevation for piezometer PZ-3B in 2015 was reported by others one-foot higher than the corrected value; therefore, a lower groundwater elevation outside was observed. The reason for the lower water level observed in piezometer PZ-3B in 2015 is unknown; however, it may be due to dry season conditions observed similar in 2022. The slightly lower than expected groundwater elevations in piezometer PZ-3B in October and November 2022 may be the result from the atypical dry summer months in 2022 (AESI, 2022).

The groundwater elevation data for the piezometers suggests the barrier wall is performing as intended and isolating groundwater inside the barrier from that outside the barrier.

GROUNDWATER QUALITY MONITORING

The annual groundwater quality monitoring event was performed by MEC on October 29, 2024. A groundwater sample was collected from piezometer well PZ-3A located inside the barrier wall for chemical analysis. The sampling was performed in general accordance with Environmental Protection Agency (EPA) low-flow sampling protocols. Following stabilization, the groundwater sample was collected from the pump outlet tubing and placed directly into laboratory-prepared glass sample containers and labeled with a unique sample identification. Sample containers were placed in a chilled cooler immediately following sampling, and subsequently transported to the analytical laboratory under standard chain of custody protocols. The groundwater sample was analyzed for gasoline-range petroleum hydrocarbons (GRPH) using the Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx, diesel- and heavy oil-range petroleum hydrocarbons (DRPH and ORPH) using the NWTPH Method NWTPH-Dx, pentachlorophenol (PCP) using EPA Method 8270E SIM, and arsenic using EPA Method 200.8.

Groundwater analytical results are presented in Table 4 and a copy of the analytical laboratory report and chain of custody is included as Appendix A. The results are compared to the Washington State Model Toxics Control Act (MTCA) Method A and Method C cleanup levels that were established in the Cleanup Action Plan by Ecology (Ecology, 1998B) as part of the Consent Decree for the Site within the area of the containment wall. Concentrations of total petroleum hydrocarbons (TPH) including GRPH, DRPH, and ORPH were below the established MTCA cleanup level criteria of 10,000 micrograms per Liter (µg/L). PCP was not detected at a concentration exceeding the laboratory reporting limit. Total arsenic was detected at a concentration of 540 µg/L, which exceeds the established MTCA cleanup level criteria of 5 µg/L. Groundwater quality concentration trend charts (time - concentration) over the past 11 years for TPH, PCP, and arsenic are presented on Figures 6 through 8, respectively.

QUALITY ASSURANCE/QUALITY CONTROL

Laboratory quality assurance/quality control (QA/QC) analyses were performed as part of the laboratory sample analysis for the 2024 groundwater quality monitoring event. Laboratory results were evaluated by Friedman & Bruya, Inc. against analysis of the method blank, matrix spike, matrix spike duplicates, laboratory duplicates, and calibrations as required by the specific analytical methods. The Lab Control Spike percent recovery for both the neutral blank and the samples analyzed are within the QC limits. All other QA/QC results were acceptable for their intended use. The laboratory analytical report is included as Appendix B.

After the data were received from the laboratory, data validation QC procedures were followed to provide an accurate evaluation of the data quality and usability. The analytical holding times were met, and the method blanks had no detections. The laboratory analytical report indicates that quality control requirements were acceptable. Detections of GRPH and DRPH were flagged by the laboratory for the sample chromatographic pattern does not resemble the fuel standard used for quantitation. No other qualifiers were added to the analytical laboratory report.

ASPHALT CAP AND SOIL COVER

The asphalt cap and soil cover inspection monitoring was performed on October 29, 2024, by MEC personnel. Amazon delivery service is currently using the asphalt cap portion of the Site as a parking lot for delivery vehicles. Chain-linked security fencing is in place around the perimeter of the asphalt cap. A copy of the field report from the Site visit is attached as Appendix B.

Most of the asphalt cap area, about 85 to 95 percent, was visible at the time of the Site visit. In areas observed, the asphalt cap was observed to be in serviceable condition with no obvious signs of major cracking, fissures, or signs of excessive settlement. The minor cracks in the asphalt cap from the previous year were observed to have been repaired with asphalt crack filler/sealer. Minor cracking was observed on the south portion of the asphalt cap with minor amounts of vegetation growing through the cracks and sediment in the drainage ditches. Minor ponding on the asphalt surface was observed in areas with small shallow depressions.

The areas to the south of the asphalt cap are covered with a minimum 1-foot-thick soil cover with grass and some scattered brush. The soil cap appeared intact and was performing as intended. Photographs taken at the time of the Site visit are included in Appendix B.

PERFORMANCE AND COMPLIANCE MONITORING SCHEDULE

Annual groundwater monitoring and cap inspection will continue in October of 2025 and the results will be reported as part of the annual PCMP summary report to Ecology. Ecology will be notified if monitoring and inspection results indicate significant deviations from recent performance and compliance monitoring results observed over the last 10 years.

LIMITATIONS

This report has been prepared for the exclusive use of Pacific Topsoils, Inc., for specific application to this project. Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted environmental industry practices in effect in this area at the time our report was prepared. It is not meant to represent a legal opinion. No other warranty, express or implied, is made.

REFERENCES

Associated Earth Sciences, Inc., 2009, Technical memorandum: Mill E 2009 ground water monitoring summary: Prepared for Pacific Topsoils, Inc.

Kane Environmental Inc., 2023, Technical memorandum: Former Mill E / Koppers Facility, 2023 annual performance and compliance monitoring report: Prepared for Washington State Department of Ecology, February 27, 2024.

EMCON, 1998, Performance and compliance monitoring plan, Former Mill E/Koppers Facility, Everett, Washington: Prepared for Weyerhaeuser Company, October 8, 1998.

Floyd | Snider, 2017, Former Mill E/Koppers Facility, Performance and compliance monitoring plan addendum: Prepared for The Weyerhaeuser Company, August 2017.

Floyd | Snider, 2020, Former Mill E/Koppers Site 2020 annual performance and compliance monitoring report: Prepared for Washington State Department of Ecology, November 11, 2020.

Washington State Department of Ecology, 1998A, Consent decree: Weyerhaeuser Mill E/Koppers Site, Everett, Washington, October 8, 1998 and filed on December 1, 1998.

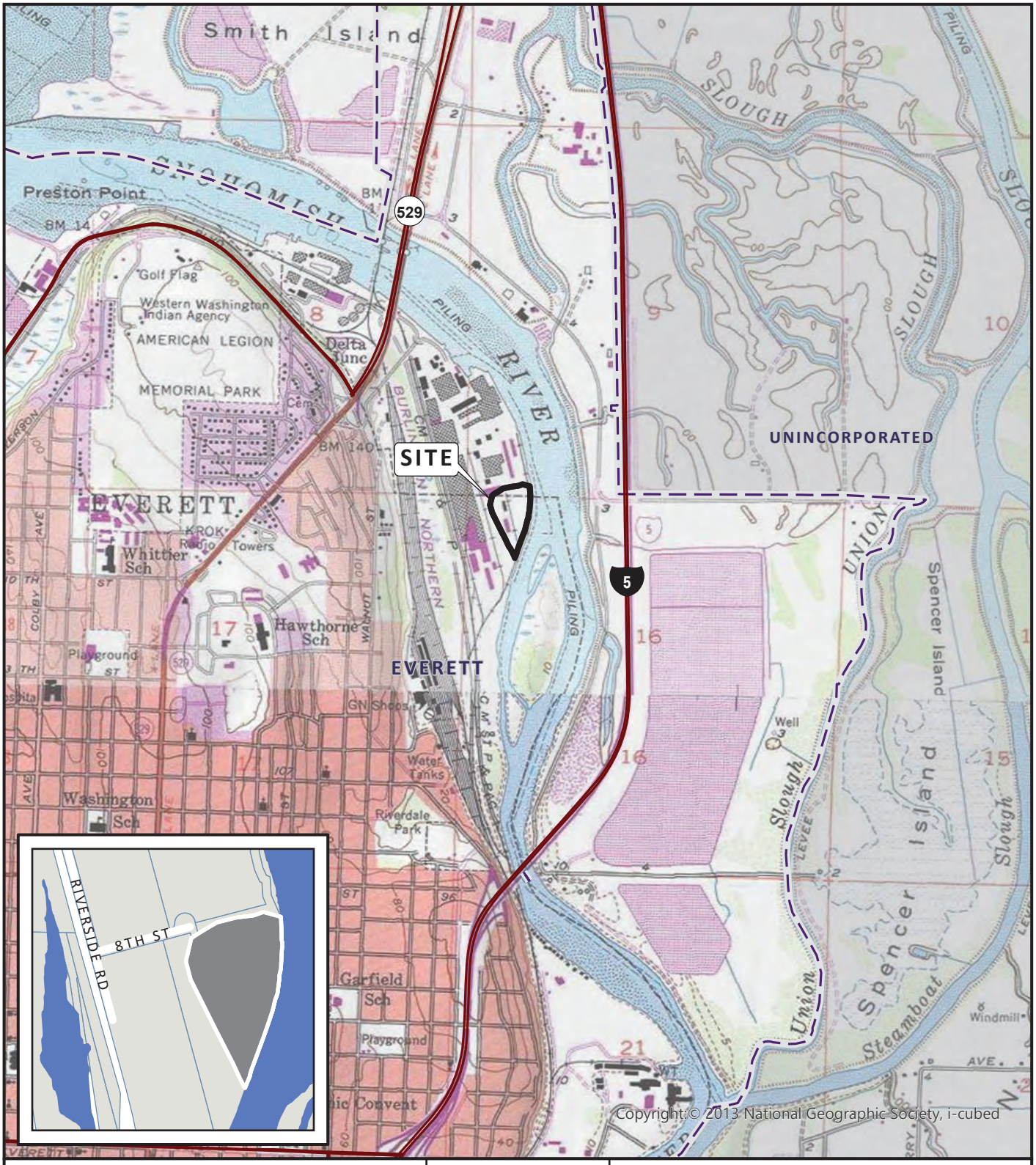
Washington State Department of Ecology, 1998B, Cleanup action plan: Weyerhaeuser Mill E/Koppers Site, Everett, Washington, October 8, 1998.

ATTACHMENTS:

Figure 1: Vicinity Map
Figure 2: Site Plan and 2024 Groundwater Elevations
Figure 3: Groundwater Elevation Trends, PZ-1A and PZ-1B
Figure 4: Groundwater Elevation Trends, PZ-2A and PZ-2B
Figure 5: Groundwater Elevation Trends, PZ-3A and PZ-3B
Figure 6: Groundwater Quality Trends for PZ-3A, Total Petroleum Hydrocarbons
Figure 7: Groundwater Quality Trends for PZ-3A, Pentachlorophenol
Figure 8: Groundwater Quality Trends for PZ-3A, Total Arsenic
Table 1: Summary of Groundwater Elevations
Table 2: Horizontal Hydraulic Head Difference Comparisons
Table 3: Vertical Hydraulic Head Difference Comparisons

ATTACHMENTS (CONTINUED):

Table 4: Summary of Groundwater Analytical Results, TPH, SVOCs, and Metals
Appendix A: Laboratory Report dated November 7, 2024 and Chain of Custody
Appendix B: Field Report for Asphalt Cap and Soil Cover Monitoring



DATA SOURCES / REFERENCES:
USGS: 7.5' SERIES TOPOGRAPHIC MAPS, ESRI/I-CUBED/NATIONAL GEOGRAPHIC SOCIETY 2013
SNOHOMISH CO: STREETS, CITY LIMITS, PARCELS, 2/19
LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

N

0 1000 2000

FEET

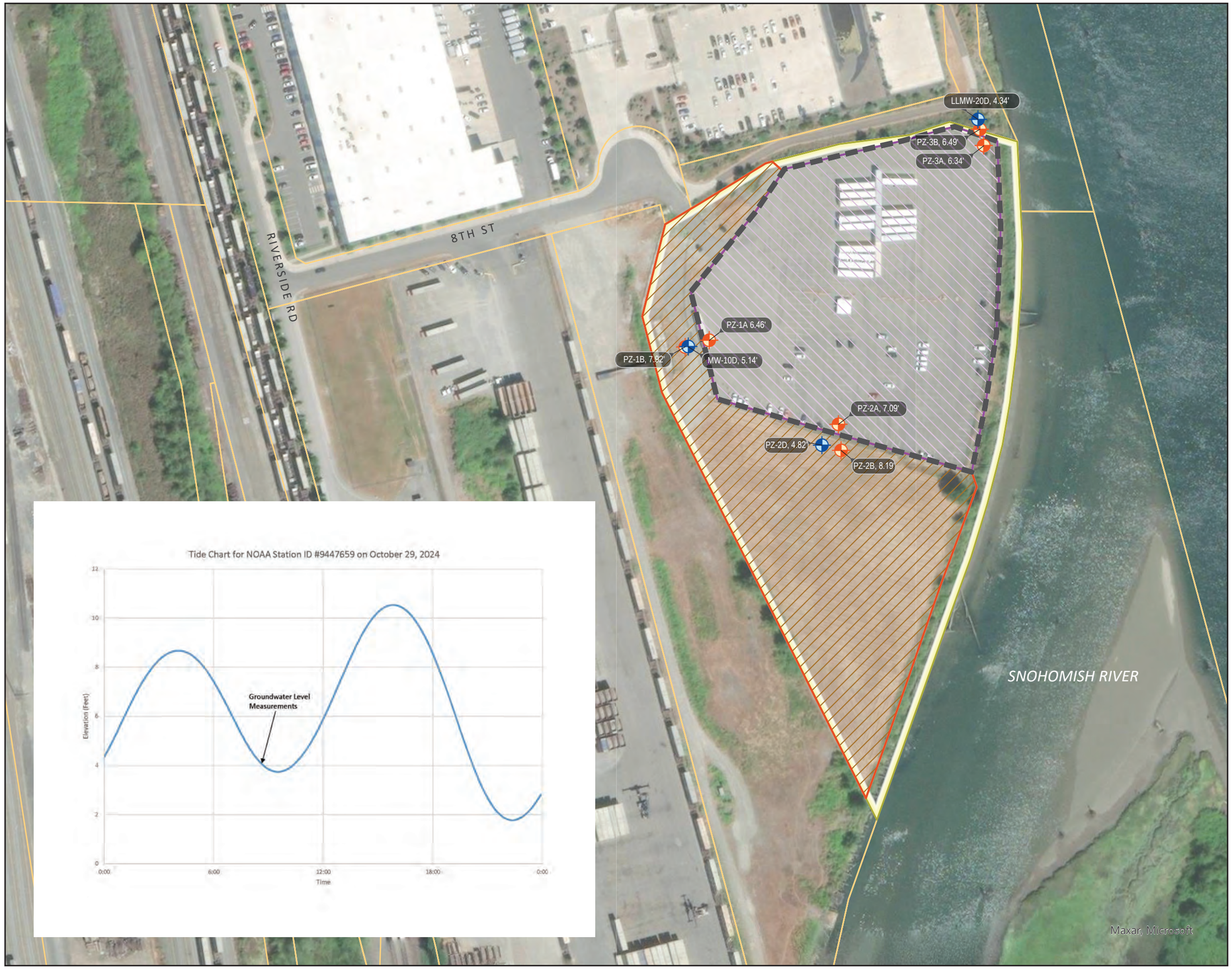
NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION

MADRONA ENVIRONMENTAL CONSULTING, LLC

VICINITY MAP

FORMER MILL E / KOPPERS FACILITY
EVERETT, WASHINGTON

PROJ NO.	DATE:	FIGURE:
1001-002	12/24	1



LEGEND

- SITE
- LOWER SAND AQUIFER PIEZOMETER/WELL
- UPPER SAND AQUIFER PIEZOMETER
- BARRIER WALL
- ASPHALT CAP AREA
- SOIL CAP AREA
- PARCEL

NOTE:
GROUNDWATER ELEVATIONS MEASURED FROM PZ-1, PZ-2, AND PZ-3 PIEZOMETER TRIPLETS ON 10/29/2024.

DATA SOURCES / REFERENCES:
TIDE CHART DATA ACQUIRED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION STATION ID #9447659, EVERETT WA

SITE DATA PROVIDED BY FLOYD|SNIDER
2020 ANNUAL PERFORMANCE AND COMPLIANCE MONITORING REPORT, SITE FEATURES AND MONITORING NETWORK,FIGURE 2, 11/10/20

SNOHOMISH CO: STREETS, 2/19, PARCELS 7/22
AERIAL: ESRI WORLD IMAGERY 3/21

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

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MADRONA ENVIRONMENTAL CONSULTING, LLC

SITE PLAN AND 2024 GROUNDWATER ELEVATIONS

FORMER MILL E / KOPPERS FACILITY
EVERETT, WASHINGTON

PROJ NO.	DATE:	FIGURE:
1001-002	12/24	2

Figure 3
Groundwater Elevation Trends
PZ-1A and PZ-1B
Former Mill E / Koppers Facility
Everett, Washington

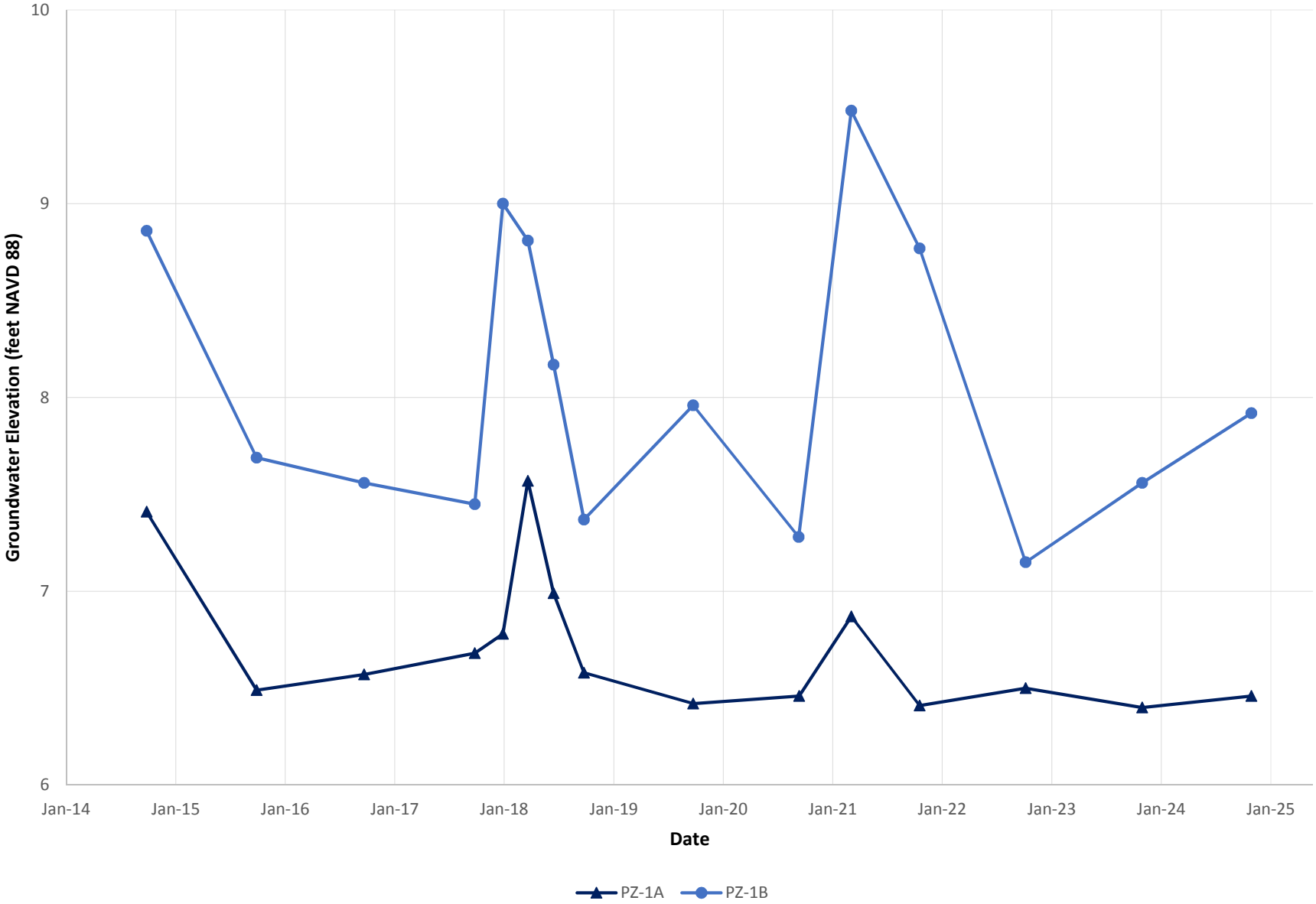

Figure 4
Groundwater Elevation Trends
PZ-2A and PZ-2B
Former Mill E / Koppers Facility
Everett, Washington

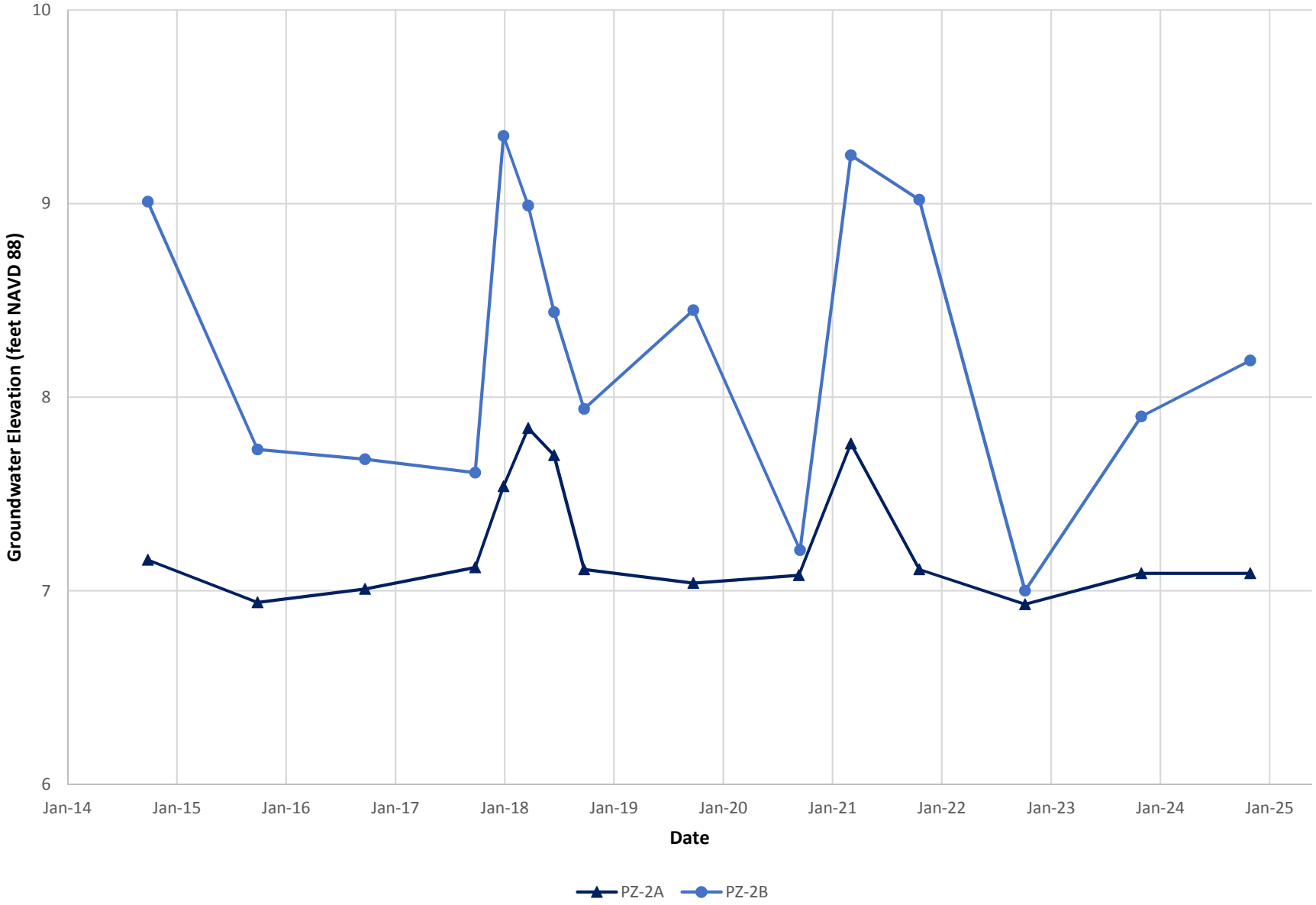

Figure 5
Groundwater Elevation Trends
PZ-3A and PZ-3B
Former Mill E / Koppers Facility
Everett, Washington

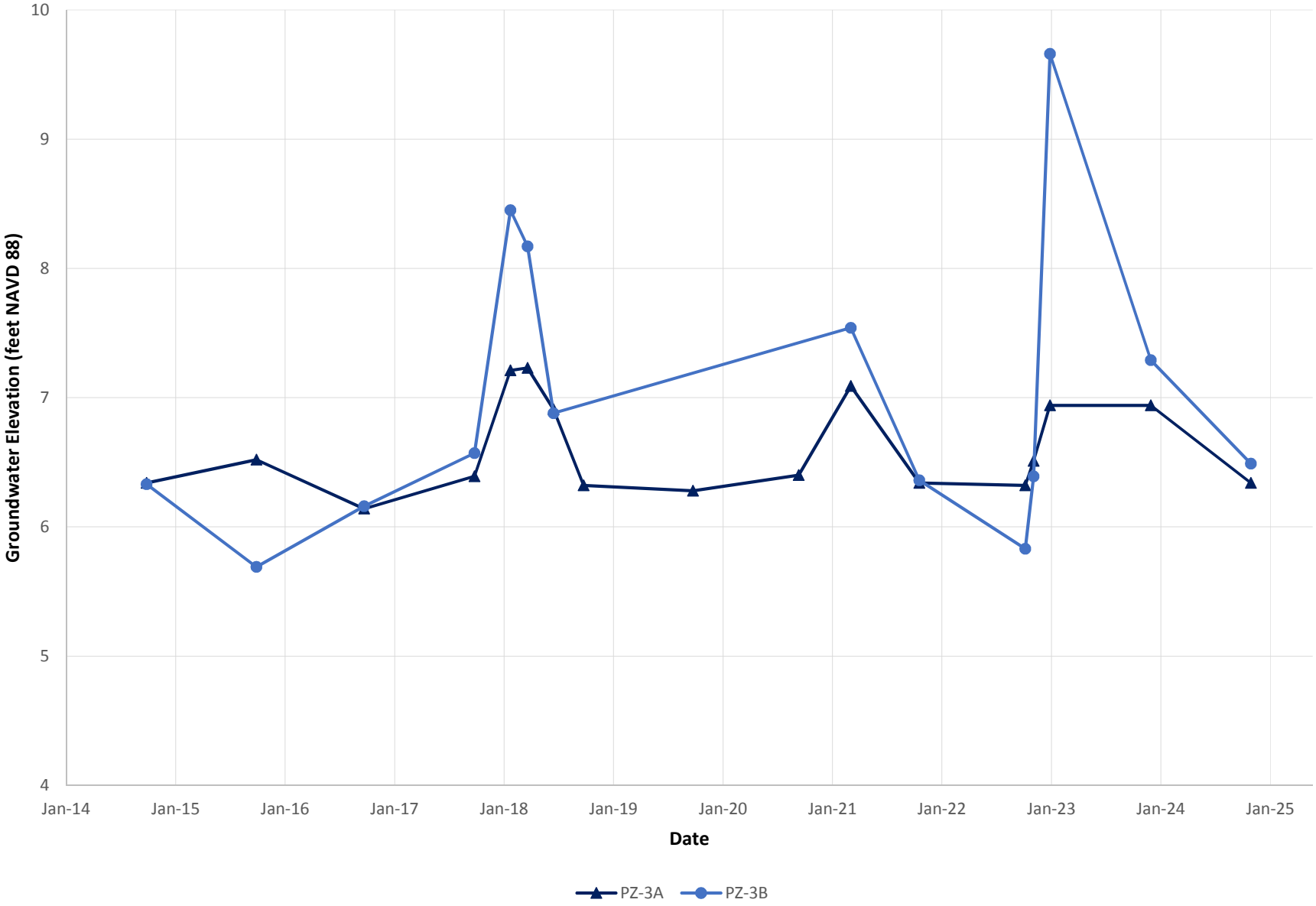

Figure 6
Groundwater Quality Trends for PZ-3A
Total Petroleum Hydrocarbons
Former Mill E / Koppers Facility
Everett, Washington

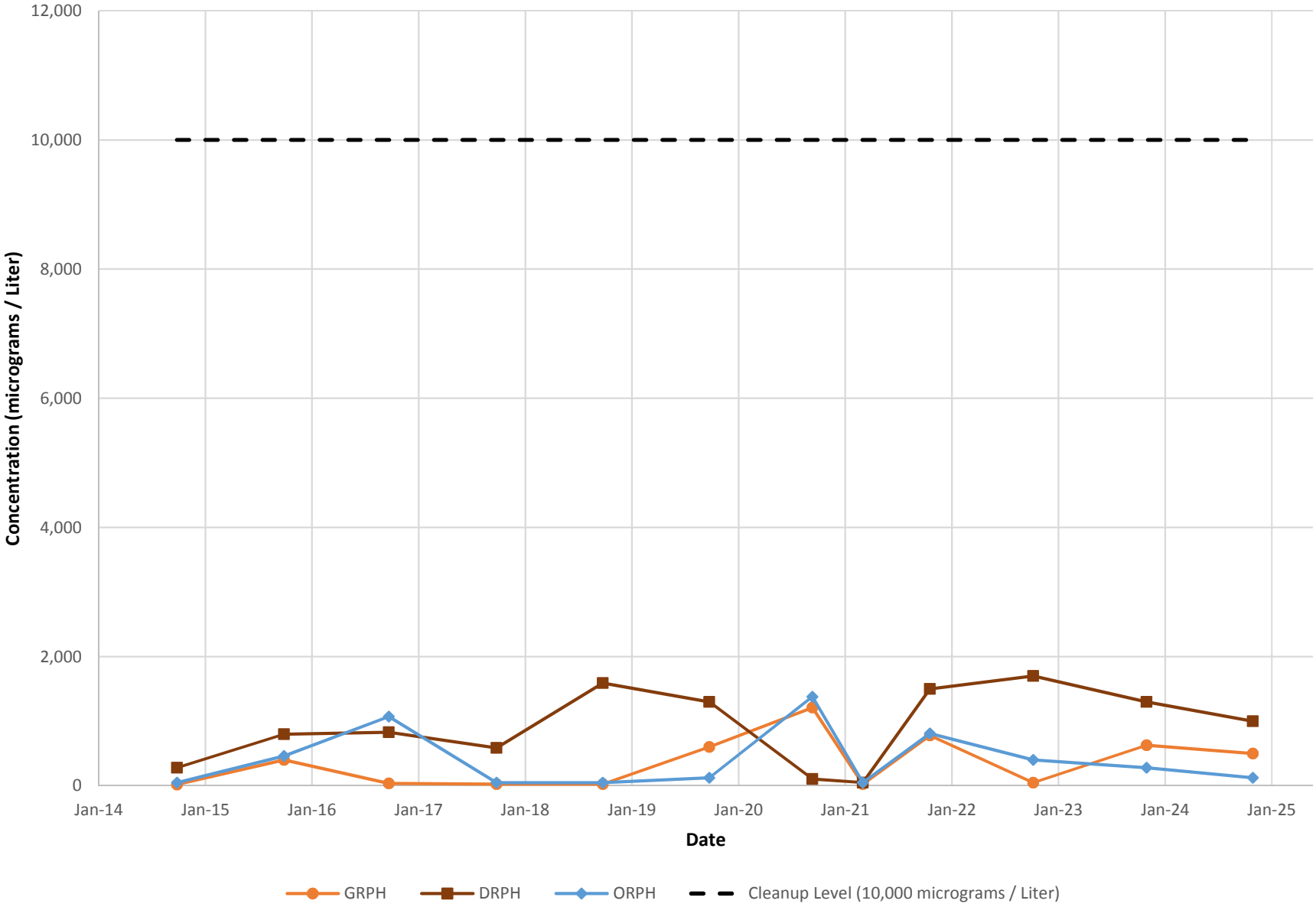

Figure 7
Groundwater Quality Trends for PZ-3A
Pentachlorophenol
Former Mill E / Koppers Facility
Everett, Washington

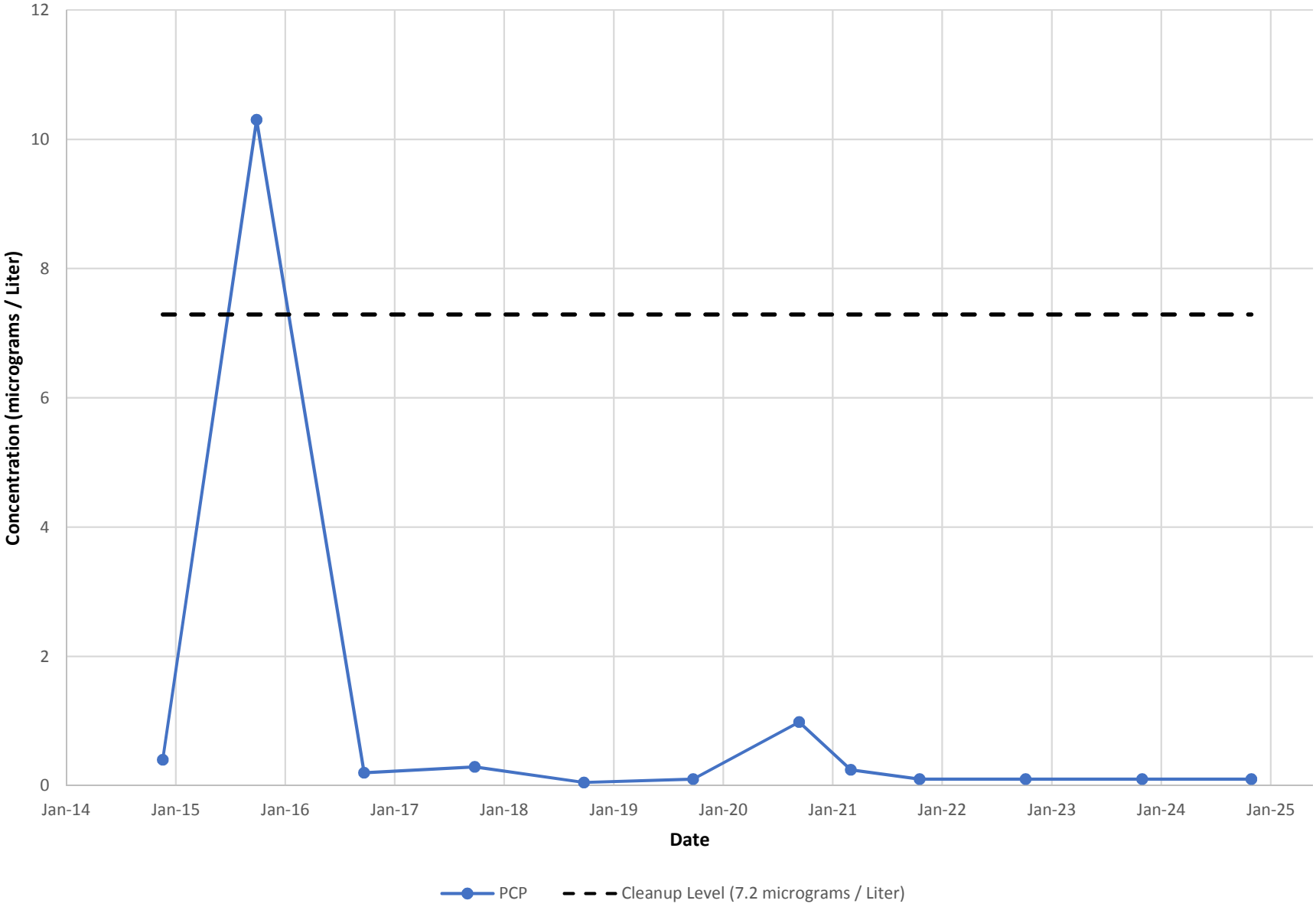

Figure 8
Groundwater Quality Trends for PZ-3A
Arsenic
Former Mill E / Koppers Facility
Everett, Washington

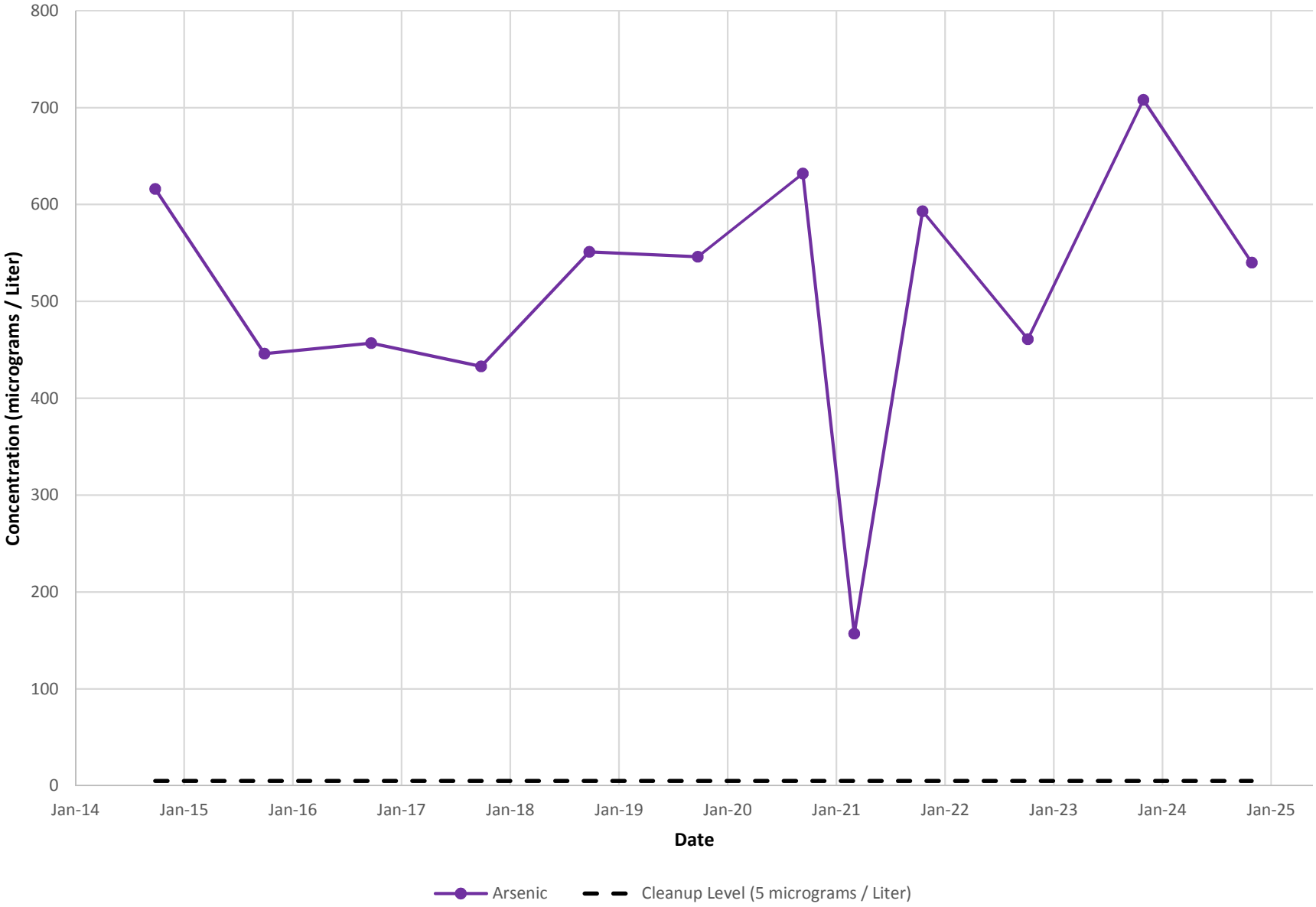

Table 1
Summary of Groundwater Elevations
Former Mill E/Koppers Facility
Everett, Washington

Piezometer / Well Location [1]	Date	Time Measured [2]	Top of Casing Elevation [3]	Depth to Water (feet btoc)	Groundwater Elevation [3]
PZ-1A	10/29/2024	9:14	13.18	6.72	6.46
PZ-1B	10/29/2024	9:03	13.10	5.18	7.92
MW-10D[4]	10/29/2024	8:59	13.44	8.30	5.14
PZ-2A	10/29/2024	9:24	12.90	5.81	7.09
PZ-2B	10/29/2024	8:53	11.93	3.74	8.19
PZ-2D	10/29/2024	8:56	12.60	7.78	4.82
PZ-3A	10/29/2024	8:48	14.06	7.72	6.34
PZ-3B	10/29/2024	8:43	14.44	7.95	6.49
LLMW-20D	10/29/2024	8:40	14.86	10.52	4.34

NOTES:

(1) "A" wells are located inside the barrier wall in the Upper Sand Aquifer; "B" wells are located outside the barrier wall in the Upper Sand Aquifer; and "D" wells are located outside the barrier wall in the Lower Sand Aquifer.

(2) Time noted in a 24-hour time format.

(3) Top of well casing and groundwater elevations are presented in NAVD 88. Wells and piezometers were surveyed on 9/10/2020 by ASPI, LLC.

(4) MW-10D replaces LLMW-19D as the Deep Sand Aquifer paired with PZ-1A and PZ-1B.

ASPI = Apha Subdivision Pro's Inc

btoc = below top of casing

NAVD 88 = North American Vertical Datum of 1988

Table 2
Horizontal Hydraulic Head Difference Comparisons
Former Mill E/Koppers Facility
Everett, Washington

Piezometer / Well Pair [1]	Date	"B" Piezometer Upper Sand Aquifer Elevation [2]	"A" Piezometer Upper Sand Aquifer Elevation [2]	Horizontal Head Difference
PZ-1A/PZ-1B	10/29/2024	7.92	6.46	1.46
PZ-2A/PZ-2B	10/29/2024	8.19	7.09	1.10
PZ-3A/PZ-3B	10/29/2024	6.49	6.34	0.15

NOTES:

(1) "A" wells are located inside the barrier wall in the Upper Sand Aquifer; "B" wells are located outside the barrier wall in the Upper Sand Aquifer.

(2) Elevations are presented in feet North American Vertical Datum of 1988.

Table 3
Vertical Hydraulic Head Difference Comparisons
Former Mill E/Koppers Facility
Everett, Washington

Piezometer / Well Pair [1]	Date	Location Relative to Barrier Wall	Upper Sand Aquifer Elevation [2]	Lower Sand Aquifer Elevation [2]	Vertical Head Difference
PZ-1A/MW-10D	10/29/2024	Inside	6.46	5.14	1.32
PZ-1B/MW-10D	10/29/2024	Outside	7.92	5.14	2.78
PZ-2A/PZ-2D	10/29/2024	Inside	7.09	4.82	2.27
PZ-2B/PZ-2D	10/29/2024	Outside	8.19	4.82	3.37
PZ-3A/LLMW-20D	10/29/2024	Inside	6.34	4.34	2.00
PZ-3B/LLMW-20D	10/29/2024	Outside	6.49	4.34	2.15

NOTES:

(1) "A" wells are located inside the barrier wall in the Upper Sand Aquifer; "B" wells are located outside the barrier wall in the Upper Sand Aquifer; and "D" wells are located outside the barrier wall in the Lower Sand Aquifer.

(2) Elevations are presented in feet North American Vertical Datum of 1988.

Table 4
Summary of Groundwater Anlaytical Results
TPH, SVOCs, and Metals
Former Mill E/Koppers Facility
Everett, Washington

Piezometer	Sample ID	Sample Date	Analytical Results [1] (micrograms per Liter)				
			Total Petroleum Hydrocarbons			SVOCs	Metals
			Gasoline Range Hydrocarbons [2]	Diesel Range Hydrocarbons [3]	Heavy Oil Range Hydrocarbons [3]	PCP [4]	Total Arsenic [5]
PZ-3A	PZ-3A-20241029	10/29/2024	500 x	1,000 x	< 250	< 0.2	**540**
Criteria [6]			10,000	10,000	10,000	7.29	5

NOTES:

(1) Samples were analyzed by Friedman & Bruya, Inc. of Seattle, Washington.

(2) Sample analyzed by NWTPH Method NWTPH-Gx

(3) Sample analyzed by NWTPH Method NWTPH-Dx

(4) Sample analyzed by EPA Method 8270D SIM

(5) Sample analyzed by EPA Method 200.8

(6) Criteria are from the cleanup levels established in the 1998 Consent Decree based on MTCA Method A and C.

x = the sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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

Red = concentration exceeds Criteria. EPA = Environmental Protection Agency

MTCA = Washingston State Model Toxics Control Act NWTPH = Northwest Total Petroleum Hydrocarbon

PCP = pentachlorophenol

SVOCs = semivolatile organic compounds

TPH = total petroleum hydrocarbons

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Yelena Aravkina, M.S.
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Vineta Mills, M.S.
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November 7, 2024

Tim Brown, Project Manager
Madrona Environmental Consulting, LLC
1725 29th Ave
Seattle, WA 98122

Dear Mr Brown:

Included are the results from the testing of material submitted on October 29, 2024 from the Mill E 1001-002, F&BI 410549 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: timbrown.MEC@outlook.com
NAA1107R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 29, 2024 by Friedman & Bruya, Inc. from the Madrona Environmental Consulting, LLC Mill E 1001-002, F&BI 410549 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Madrona Environmental Consulting, LLC
410549 -01	PZ-3A-20241029

All quality control requirements were acceptable.

Date of Report: 11/07/24
Date Received: 10/29/24
Project: Mill E 1001-002, F&BI 410549
Date Extracted: 10/30/24
Date Analyzed: 10/31/24

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
PZ-3A-20241029 410549-01	500 x	111
Method Blank 04-2442 MB	<100	102

Date of Report: 11/07/24
Date Received: 10/29/24
Project: Mill E 1001-002, F&BI 410549
Date Extracted: 10/31/24
Date Analyzed: 10/31/24

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
PZ-3A-20241029 410549-01	1,000 x	<250	80
Method Blank 04-2670 MB2	<50	<250	81

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	PZ-3A-20241029	Client:	Madrona Environmental Consulting, LLC
Date Received:	10/29/24	Project:	Mill E 1001-002, F&BI 410549
Date Extracted:	11/05/24	Lab ID:	410549-01 1/0.5
Date Analyzed:	11/05/24	Data File:	110510.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2,4,6-Tribromophenol	106	10	142

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

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Madrona Environmental Consulting, LLC
Date Received:	Not Applicable	Project:	Mill E 1001-002, F&BI 410549
Date Extracted:	11/05/24	Lab ID:	04-2690 mb2 1/0.5
Date Analyzed:	11/05/24	Data File:	110507.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2,4,6-Tribromophenol	93	10	142

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

Analysis For Total Metals By EPA Method 200.8

Client ID:	PZ-3A-20241029	Client:	Madrona Environmental Consulting, LLC
Date Received:	10/29/24	Project:	Mill E 1001-002, F&BI 410549
Date Extracted:	10/30/24	Lab ID:	410549-01 x100
Date Analyzed:	10/31/24	Data File:	410549-01 x100.183
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	540

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Madrona Environmental Consulting, LLC
Date Received:	NA	Project:	Mill E 1001-002, F&BI 410549
Date Extracted:	10/30/24	Lab ID:	I4-922 mb
Date Analyzed:	10/30/24	Data File:	I4-922 mb.162
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

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

Date of Report: 11/07/24
Date Received: 10/29/24
Project: Mill E 1001-002, F&BI 410549

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

Laboratory Code: 410473-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	93	70-130

Date of Report: 11/07/24
Date Received: 10/29/24
Project: Mill E 1001-002, F&BI 410549

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	88	92	65-151	4

Date of Report: 11/07/24
Date Received: 10/29/24
Project: Mill E 1001-002, F&BI 410549

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Pentachlorophenol	ug/L (ppb)	10	94	102	14-137	8

Date of Report: 11/07/24
Date Received: 10/29/24
Project: Mill E 1001-002, F&BI 410549

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

Laboratory Code: 410527-01 (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	<1	104	100	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	98	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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

410549

SAMPLE CHAIN OF CUSTODY

10/29/24 VW1/J1/C2

Page # 1 of 1

Report To Tim Brown

Company Madrona Environmental Consulting, LLC

Address 1725 29th Ave,

City, State, ZIP Seattle, WA 98122

Phone 206.384.9301 Email timbrown.MEC@outlook.com timbrown.MEC@outlook.com

SAMPLERS (*signature*) T. Brn

PROJECT NAME: Mill E

PO #: 1001-002

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: See Email

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EPA Method 200.8 Total Arsenic	PCB by EPA Method 8270 E SIM			Notes
PZ-3A-20241029	01A-F	10/29/24	1246	W	6	X	X						X	X			

TSB 10/29/24

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: T. Brn	Tim Brown	Madrona Environmental Consulting	10/29/24	1725
Received by:	Isaac Lessley	FBI	10/29/24	17:25
Relinquished by:				
Received by:		Samples received at 0 °C		

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 410549 CLIENT Madrona Environmental INITIALS/ DATE: TTL 10/29

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

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

Were samples received on ice/cold packs? ☒ YES ☐ NO

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

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/ AP
*or other representative documents, letters, and/or shipping memos Date: 10/30/24

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

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

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

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

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

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

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

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

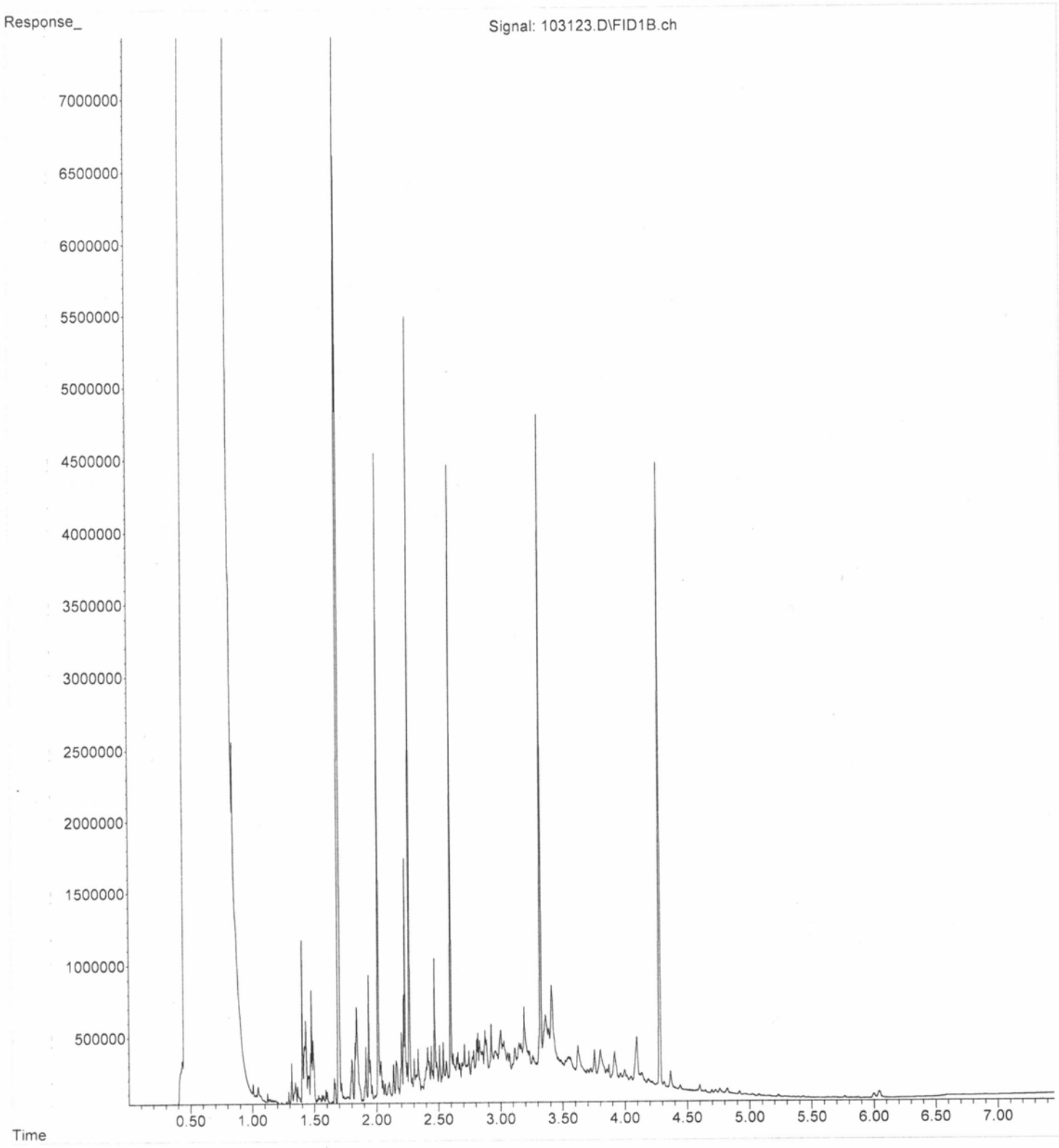
Other comments (use a separate page if needed)

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

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

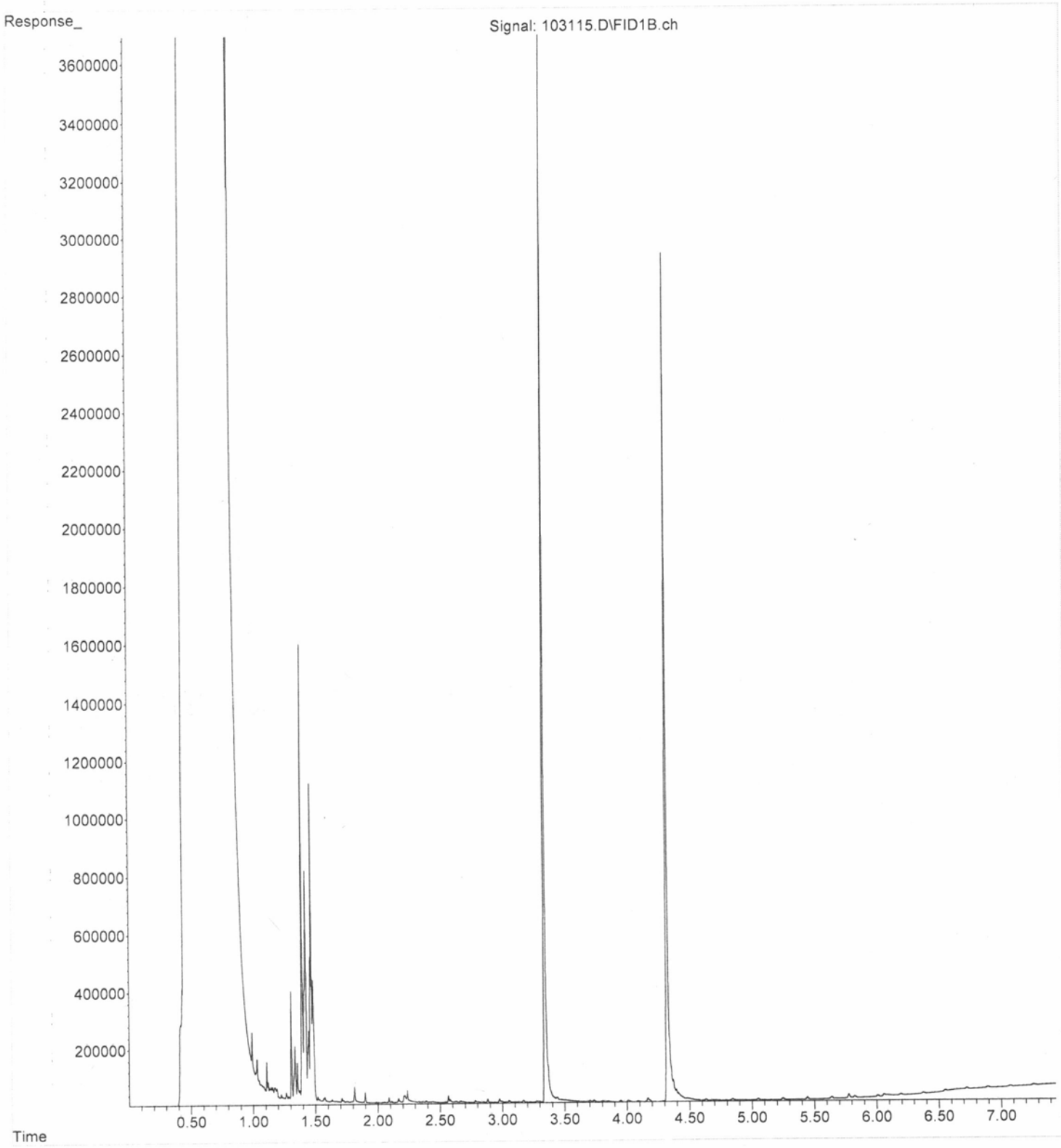
File :P:\Proc_GC14\10-31-24\103123.D
Operator : TL
Acquired : 31 Oct 2024 03:16 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 410549-01
Misc Info :
Vial Number: 20

ERR



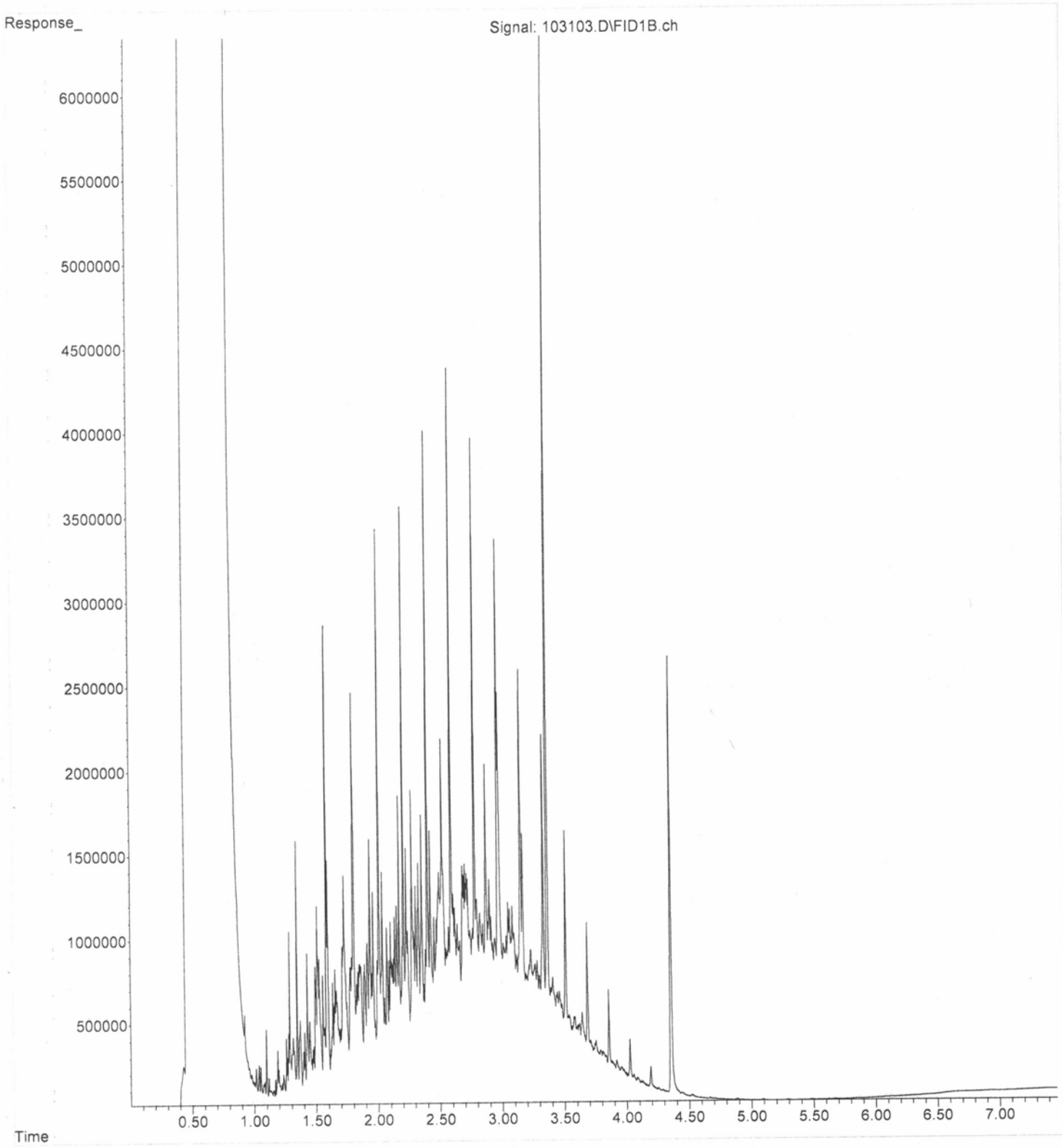
File :P:\Proc_GC14\10-31-24\103115.D
Operator : TL
Acquired : 31 Oct 2024 01:40 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-2670 mb2
Misc Info :
Vial Number: 14

ERR



File :P:\Proc_GC14\10-31-24\103103.D
Operator : TL
Acquired : 31 Oct 2024 08:04 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 73-88G
Misc Info :
Vial Number: 3

ERR



MADRONA ENVIRONMENTAL CONSULTING, LLC

FIELD REPORT

Client/ Site Name:		Project Number:	Date:
Pacific Topsoils, Inc. / Former Mill E / Koppers Facility		1001-002	10/29/2024
Site Address:		Purpose of Visit/Task#:	Field Report Prepared by:
Riverside Business Park, Everett, WA		Asphalt Cap and Soil Cover Monitoring	Tim Brown
Temp/Weather:	Permit Required to Work:	Time of Arrival/Departure	Personnel Onsite:
~48°F / Cloudy, Light Rain	Not Applicable	7:45 AM onsite to 2:15 PM offsite	Tim Brown

An inspection monitoring event of the Asphalt Cap and Soil Cover was performed as part of the Performance and Compliance Monitoring Plan (EMCON 1998). Madrona Environmental Consulting, LLC was on site to perform visual site observations on October 29, 2024. In general, site observations were similar to last monitoring event, except for previously noted asphalt cracks in the southern and western portions of the asphalt cap were observed to be repaired.

The property is occupied by Amazon service small delivery vehicles and truck and trailers, many of which were parked at the time of the site visit. There was white paint marked parking spaces observed throughout the site (Photographs 1 and 2).

Most of the asphalt cap, about 85 to 95 percent, was visible at the time of the site visit. The asphalt cap was observed to be in serviceable condition. The minor cracks in the asphalt cap from the previous year were observed to have been repaired with asphalt crack filler/sealer (Photograph 3).

No obvious signs of major cracking, fissures, or surface pumping were observed. There are areas where shallow depressions were observed, which were less than 2-inches in depth from recent rainfall. These shallow depressions were less than 10 feet in diameter, like the previous year. Minor ponding on asphalt surface was observed in areas with shallow depressions (Photograph 4).

Drainage ditches had nominal amounts of accumulated sediment than previous year, and where present, the accumulated sediment amounts appeared to be less than 1/2-inch. Minor cracks with vegetation growing through were observed along the southern drainage ditch. In addition, vegetation was growing from the adjoining soil cap area into the southern drainage ditch (Photograph 5).

The vault lid for well PZ-3A was partially sealed with asphalt sealant from asphalt cap repairs performed at the site (Photograph 6). MEC was able to remove the sealant to access the well.

Madrona Environmental Consulting, LLC recommends maintaining the drainage ditches by removing visible vegetation from the minor cracks and sediment in the drainage ditches, and overlying vegetation in ditches from soil cap areas inside the fenced area. In addition, it is recommended that maintenance of the asphalt cap continue, if cracks are observed, to maintain the asphalt cap integrity in a serviceable condition and meet the performance objectives to prevent potential direct contact with contaminated soil and surface water infiltration at the site.

The soil cap to the south of the asphalt cap appeared intact and is performing as intended (Photographs 7 and 8). No major ponding or erosion was observed. Photographs of general observations are provided below.

Timothy S. Brown

Principal PM Signature

Photograph 1 - Looking north-northeast at the southern portion of the asphalt cap. Multiple cracks are observed to be repaired with a crack joint sealant.

Photograph 2 - Looking north-northwest at the southeastern portion of the asphalt cap with thin cracks on surface observed to be repaired.

Photograph 3 - Looking west at the northeastern portion of the asphalt cap. Photograph of typical asphalt crack repaired with a joint sealant.

Photograph 4 - Looking south-southwest at the western portion of the asphalt cap with repaired cracks on surface and minor ponding.

Photograph 5 - Looking east at southeastern portion of the asphalt cap. Photograph shows vegetation in the south drainage ditch. Vegetation was observed to be growing through minor cracks and adjoining soil cap area.

Photograph 6 - Photograph of well PZ-3A vault lid with asphalt sealant.

Photograph 7 - Looking south at western portion of the soil cap.

Photograph 8 - Looking south at eastern portion of the soil cap.