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November 30, 2021

Joyce Mercuri
Washington Department of Ecology
Cleanup Project Manager
Southwest Regional Office – Toxics Cleanup Program

Subject: 2021 Groundwater Monitoring Report – Superlon Plastics Property
Agreed Order DE 5940

Dear Joyce Mercuri:

On behalf of the Chemours Company, LLC (Chemours), PIONEER Technologies Corporation (PIONEER) is submitting the attached 2021 Groundwater Monitoring Report for the Superlon Plastics Property.

Please contact me at (206) 890-4849 or Jeff King of Pacific Environmental and Redevelopment Corporation (PERC) at (425) 238-2212, if you have any questions or comments about this 2021 Groundwater Monitoring Report.

Respectfully,

Nathan Starr, WA L.G. #2760

Enclosure

cc: Jeff King, PERC (electronic copy only)
Sebastian Bahr, Chemours (electrical copy only)

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2021 Groundwater Monitoring Report
Superlon Plastics Property

Prepared for:

White Birch Group LLC
2116 Taylor Way
Tacoma, WA 98401

and

The Chemours Company
Corporate Remediation Group
1007 Market Street, Room 13116A
Wilmington, Delaware 19899

November 30, 2021

Nathan Starr, L.G., Senior Hydrogeologist

Pacific Environmental and Redevelopment Corporation

424 East Meadow Lake Drive
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Acronyms and Abbreviations

Acronym/Abbreviation	Description
Chemours	The Chemours Company FC, LLC
COPC	Constituent of Potential Concern
Ecology	Washington State Department of Ecology
Eh	Activity of Electrons
mg/L	Milligrams per liter
MW	Groundwater Monitoring Well
MTCA	Model Toxics Control Act
PERC	Pacific Environmental and Redevelopment Corporation
PIONEER	PIONEER Technologies Corporation
Property	Superlon Plastics Property
QA/QC	Quality Assurance / Quality Control
RI	Remedial Investigation
SAP/QAPP	Sampling and Analytical Plan / Quality Assurance Project Plan
USEPA	United States Environmental Protection Agency
White Birch	White Birch Group LLC

1. Introduction

1.1 Overview

Annual groundwater monitoring has been completed at the Superlon Plastics Property (Property) as part of the remedial investigation (RI) for the Property. The RI is a requirement of the Washington State Department of Ecology (Ecology)-approved Agree Order (No. DE 5940) between White Birch Group LLC (White Birch) and the Chemours Company FC, LLC (Chemours). All RI-associated activities are being conducted in accordance with Washington State Model Toxics Control Act (MTCA), Chapter 173-340 of the Washington Administrative Code.

Groundwater monitoring was conducted quarterly from third quarter 2011 until fourth quarter 2015, when the sampling frequency was reduced to one event per year (Ecology 2015). The results of the 2015-2020 groundwater monitoring events were documented in the 2015, 2016, 2017, 2018, 2019 and 2020 Groundwater Monitoring Reports. Based on the results of the 2015, 2016, 2017, 2018, 2019, and 2020 groundwater monitoring events, constituent concentrations were generally consistent with historical concentrations (Pacific Environmental and Redevelopment Corporation [PERC] and PIONEER Technologies Corporation [PIONEER] 2015, 2016, 2017, 2018, 2019, and 2021).

The 2021 groundwater monitoring sampling event was conducted on October 7, 2021. The purpose of this report is to document the results of the 2021 groundwater monitoring event. Following completion of the ongoing soil and perched water interim action new groundwater monitoring wells (MWs) will be installed and added to the groundwater monitoring program.

1.2 Property Location and Description

The Property is located at 2116 Taylor Way in Tacoma, Washington in a highly industrialized area of the Tacoma tidal flats between the Blair and Hylebos Waterways (see Figure 1). The Property is currently owned by White Birch and operated by Superlon Plastics Incorporated, an extruded plastic pipe manufacturer. The Property is boarded by Taylor Way to the north-northeast, Lincoln Avenue to the north-northwest, the former Haub Log Yard to the southwest, and Gardner-Fields to the southeast (see Figure 2).

1.3 Report Organization

The remainder of this report is organized as follows:

- Section 2: Summary of Groundwater Monitoring
- Section 3: Groundwater Monitoring Results
- Section 4: Conclusions
- Section 5: References

2. Summary of Groundwater Monitoring

2.1 Monitoring Well Locations and Installation Chronology

Historically, a total of 26 Shallow and Intermediate Aquifer co-located MWs have been installed at 13 locations on and off of the Property. As of 2021, 10 MWs remained in place, while the other 16 have been decommissioned (see Figure 3). A brief history of MW locations is presented below:

- Seven Shallow Aquifer MWs (MW-1S – MW-7S) were installed during Phase I RI activities in 2011, in accordance with the Phase I RI Work Plan (PERC 2010).
- One Shallow Aquifer MW (MW-8S) and eight Intermediate Aquifer MWs (MW-1I – MW-8I) were installed during Phase III RI activities in 2012, in accordance with the Phase III RI Work Plan (PERC 2012).
- Four Shallow Aquifer MWs (MW-9S – MW-12S) and four Intermediate Aquifer MWs (MW9I – MW12I) were installed during Phase IV RI activities in 2014, in accordance with the Phase IV RI Work Plan (PERC 2014).
- Sixteen MWs were decommissioned in 2017 (MW-1I, MW-1S, MW-3I, MW-3S, MW-5I, MW-5S, MW-6I, MW-6S, MW-7I, MW-7S, MW-8I, MW-8S, MW-11I, MW-11S, MW-12I, and MW-12S; see Figure 3).
- One Shallow Aquifer MW (MW-13S) and one Intermediate Aquifer MW (MW-13I) were installed in November 2019.[1]

2.2 Sampling Methods and Procedures

Groundwater sampling methodology and field quality controls were performed in accordance with the Project Sampling and Analytical Plan (SAP) & Quality Assurance Project Plan (QAPP) for the Superlon Plastics Property (PERC 2019). All samples were sent to a Washington State-certified laboratory in accordance with the SAP/QAPP (PERC 2019). Groundwater sampling field notes are presented in Appendix A.

2.3 QA/QC Methods

Laboratory results were verified for usability by performing Quality Assurance/Quality Control (QA/QC) data validation. QA/QC data validation generally followed the applicable guidance and requirements specified in the following:

- Guidance on Environmental Data Verification and Data Validation (United State Environmental Protection Agency [USEPA] 2002);
- USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review. Final. OSWER 9240.1-45. USEPA/540/R-08/01 (USEPA 2016a);
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Superfund Data Review. Final. OSWER 8240.1-51. EPA 540-R-10-011 (USEPA 2016b); and
- Method-specific and laboratory-established QA requirements, as applicable.

[1] MW-13S and MW-13I were installed in the proximate location of MW-3S and MW-3I which were abandoned in 2017 to allow for soil remediation.

QA/QC data validation procedures were performed in accordance with the SAP/QAPP (PERC 2019). The data validation reports are presented with laboratory reports in Appendix B. Overall the data is acceptable for use without qualification.

2.4 Constituent Analyses

The 2021 groundwater samples were analyzed for dissolved arsenic and dissolved lead only, with Ecology approval (Ecology 2015).[2] The list of constituents evaluated during the monitoring events has been reduced since sampling was initiated in 2011 as other constituents were consistently not detected or were below screening levels (PERC 2015; PERC and PIONEER 2013, 2015).[3]

[2] Dissolved arsenic and lead refers to groundwater samples that have been filtered through a 0.45-micron filter (PERC 2019). All arsenic and lead groundwater concentrations presented in this report have been filtered using a 0.45-micron filter.

[3] The constituent list was reduced to focus the monitoring on constituents of potential concern (COPCs) and eliminate the analyses of constituents not detected or infrequently detected during consecutive sampling events.

3. Groundwater Monitoring Results

Shallow and Intermediate Aquifer groundwater samples were collected from ten MWs and analyzed for dissolved arsenic and lead. The laboratory reports and associated QA/QC data validation reports for the 2021 groundwater monitoring event are presented in Appendix B.

Constituent concentrations are presented by MW and groundwater monitoring event for arsenic and lead in Table 1 and 2, respectively. Groundwater pH and Eh[4] field measurements are presented by MW and groundwater monitoring event in Tables 3 and 4, respectively. Arsenic and lead concentrations in the Shallow and Intermediate Aquifers are presented on Figures 4 through 7. Concentration trends for arsenic and lead are presented on Figures 8 and 9, respectively.

3.1 Arsenic

Arsenic concentration trends in the Shallow Aquifer are as follows (see Table 1 and Figure 8):

- Arsenic concentrations in MW-2S have remained stable and in the range of hundredths to tenths of milligrams per liter (mg/L) since the MW was installed in 2011.
- Arsenic concentrations in MW-4S have slowly increased since the MW was installed in 2011 going from detections in the hundredths of mg/L to detections in the low tenths of mg/L.
- Arsenic concentrations in MW-9S increased from 5.8 mg/L in 2014 to a maximum concentration in 2017 of 88 mg/L, followed by a decrease to 2.9 mg/L in 2021.
- Arsenic concentrations in MW-10S have slowly increased since the MW was installed in 2014 going from detections in the tenths of mg/L to detections in the low ones of mg/L.
- Arsenic concentrations in MW-13S increased from 9.1 mg/L in 2020 to 220 mg/L in 2021. MW-3S[5] had arsenic concentrations ranging from 4.9 to 20 mg/L between 2012 and 2017.

Arsenic concentration trends in the Intermediate Aquifer are as follows:

- Arsenic concentrations in MW-2I have remained stable and in the range of thousandths to tenths of mg/L since the MW was installed in 2011.
- Arsenic concentrations in MW-4I have remained stable and in the range of less than the laboratory reporting limit in the thousandths of mg/L to detections in the tenths of mg/L since the MW was installed in 2011.
- Arsenic concentrations in MW-9I have remained stable and in the range of less than 0.005 to 0.019 mg/L with the exception of a detection at 0.18 mg/L in 2016 since the MW was installed in 2014.
- Arsenic concentrations in MW-10I have remained stable and below 0.005 mg/L since the MW was installed in 2014[6].
- Arsenic concentrations in MW-13I have remained stable and in the tenths of mg/L, which are similar to the concentrations detected in MW-3I[5] between 2013 and 2017

[4] Eh is referred to as "Activity of Electrons" and is calculated from oxidation reduction potential.

[5] MW-13S replaced MW-3S and MW-13I replaced MW-3I.

[6] In 2017 the laboratory diluted the groundwater sample resulting in an elevated reporting limit of 0.10 mg/L (PERC and PIONEER 2017).

Overall, arsenic concentrations in the Shallow Aquifer appear to be fluctuating with a significant decrease in MW-9S and a significant increase in MW-13S, these fluctuations are presumably due to the ongoing soil and perched groundwater interim action. Arsenic concentrations in the Intermediate Aquifer are stable.

3.2 Lead

Lead concentration trends in the Shallow Aquifer are as follows (see Table 2 and Figure 9):

- Lead concentrations in MW-2S have not been detected above the laboratory reporting limits since the MW was installed in 2011.
- Lead concentrations in MW-4S appear have to been stable since 2011; detections have varied between 0.00015 and 0.0044 mg/L with laboratory reporting limits prior to 2019 being as high as 0.01 mg/L when lead was not detected above the laboratory reporting limit.
- Lead concentrations in MW-9S have not been detected above the laboratory reporting limits since the MW was installed in 2014.
- Lead concentrations in MW-10S appear to be slowly increasing and in the range of hundredths with one detection in the tenths of mg/L since the MW was installed in 2014.
- Lead concentrations in MW-13S have remained stable and in the tenths of mg/L, which are similar to the concentrations detected in MW-3S between 2013 and 2017.

Lead concentration trends in the Intermediate Aquifer are as follows:

- Lead concentrations in MW-2I, MW-4I, MW-9I, and MW-10I have remained below the laboratory reporting limits in the ten thousandths to thousandths of mg/L since the MWs were installed.
- Lead concentrations in MW-13I have remained stable in the range of less than the laboratory reporting limit in the thousandths of mg/L to detections in the thousandths of mg/L, which are similar to the concentrations detected in MW-3I between 2013 and 2017 (with the exception of a detection in 2013 of 0.014 mg/L.

Overall, the lead concentrations in the Shallow and Intermediate Aquifers are stable.

4. Conclusions

Overall, arsenic concentrations in the Shallow Aquifer appear to be fluctuating with a significant decrease in MW-9S and a significant increase in MW-13S, these fluctuations are presumably due to the ongoing soil and perched groundwater interim action. Arsenic and lead concentrations in the Intermediate Aquifer and lead concentrations in the Shallow Aquifer are stable.

All MWs will continue to be sampled annually. Following completion of the ongoing soil and perched water interim action new MWs will be installed and added to the groundwater monitoring program.

5. References

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Tables

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Table 1: Dissolved Arsenic Concentrations by Well and Groundwater Monitoring Event

Well Location	3Q 2011	Qual	4Q 2011	Qual	2Q 2012	Qual	3Q 2012	Qual	4Q 2012	Qual	1Q 2013	Qual	2Q 2013	Qual	3Q 2013	Qual	4Q 2013	Qual	1Q 2014	Qual	2Q 2014	Qual	3Q 2014	Qual	4Q 2014	Qual	1Q 2015	Qual	2Q 2015	Qual
MW-1S	0.0052	J	0.0063	J	0.0026	J	0.0071	J	0.013	UB	0.0093	B	0.0060	UB	0.019		0.010		0.0083		0.011		0.037		0.044		0.057		0.13	
MW-2S	0.049		0.11		0.0063	J	0.0095	J	0.052	UB	0.028	B	0.021	B	0.020		0.075		0.058		0.053		0.040		0.067		0.079		0.24	
MW-3S	4.0		15		11		4.9		5.8	B	5.0	B	4.6	B	4.9		7.8		12		16		16		14		13		14	
MW-4S	0.013	J	0.026		0.0057	J	0.0069	J	0.015	UB	0.0072	UB	0.027	B	0.0073		0.011		0.024		0.028		0.045		0.050		0.055		0.061	
MW-5S	0.36		0.28		0.41		0.51		0.45	B	0.48	B	0.32	B	0.37		0.54		0.34		0.24		0.28		0.40		0.40		0.50	
MW-6S	1.3		2.0		1.8		1.7		1.8	B	1.8	B	1.4	B	1.9		1.9		1.7		1.6		0.50		1.9		1.8		1.5	
MW-7S	0.0032	J	0.0041	J	0.020	U	0.0032	J	0.0025	UB	0.0020	UB	0.0016	UB	0.0014		0.0030		0.0019		0.0022		0.0025		0.0047		0.0021		0.0019	
MW-8S	NS		NS		NS		NS		21	B	13	B	21	B	7.7		8.9		27		0.66		13		25		5.5		40	
MW-9S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		5.8		7.4		6.0	
MW-10S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.42		0.49		0.50	
MW-11S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		1.4		2.2		2.2	
MW-12S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		100		71		90	
MW-13S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS	
MW-1I	NS		NS		NS		NS		0.0042	UB	0.0011	UB	0.0031	UB	0.0028		0.0025		0.0024		0.0018		0.0026		0.0011		0.0015		0.0010	
MW-2I	NS		NS		NS		NS		0.0018	UB	0.0010	UB	0.0016	UB	0.00064		0.0027		0.0018		0.0018		0.0024		0.0013		0.0015		0.0012	
MW-3I	NS		NS		NS		NS		1.6	B	0.91	B	0.86	B	0.69		0.56		0.54		0.42		0.48		0.49		0.45		0.32	
MW-4I	NS		NS		NS		NS		0.0078	UB	0.0019	UB	0.0052	B	0.0012		0.0040		0.0023		0.0022		0.0030		0.0021		0.0024		0.0017	
MW-5I	NS		NS		NS		NS		0.0047	UB	0.0034	UB	0.0049	B	0.000088		0.0027		0.0017		0.0017		0.0026		0.0013		0.0014		0.0016	
MW-6I	NS		NS		NS		NS		0.0075	UB	0.0013	UB	0.0023	UB	0.0020		0.0033		0.0021		0.0020		0.0012		0.0014		0.0016		0.0011	
MW-7I	NS		NS		NS		NS		0.0017	UB	0.00073	UB	0.0011	UB	0.00070		0.0029		0.0018		0.0017		0.0027		0.0019		0.0013		0.0010	U
MW-8I	NS		NS		NS		NS		0.021	UB	0.0027	UB	0.0040	UB	0.0017		0.0043		0.0026		0.0023		0.012		0.0063		0.0016		0.0048	
MW-9I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.0020		0.0023		0.0028	
MW-10I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.0027		0.0030		0.0018	
MW-11I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.0025		0.086		0.097	
MW-12I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.29		0.22		0.15	
MW-13I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS	

Notes:

Results shown are in mg/L.

Detection limit changed in 3Q17 event due to the analytical laboratory changing the analytical method for testing.

NS: Not sampled

Data Qualifiers:

U: Constituent was not detected, reporting limit is shown

J: Constituent was detected, concentration is estimated

B: Constituent was detected in an associated blank sample

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Table 1: Dissolved Arsenic Concentrations by Well and Groundwater Monitoring Event

Well Location	3Q 2015	Qual	4Q 2015	Qual	3Q 2016	Qual	3Q 2017	Qual	3Q 2018	Qual	3Q 2019	Qual	3Q 2020	Qual	3Q 2021	Qual
MW-1S	0.11		1.2		44		57		NS		NS		NS		NS	
MW-2S	0.13		0.13		0.18		0.13		0.24		0.16		0.17		0.078	
MW-3S	15		13		14		20		NS		NS		NS		NS	
MW-4S	0.083		0.073		0.093		0.15		0.10	U	0.16		0.10		0.24	
MW-5S	0.49		0.50		1.1		0.86		NS		NS		NS		NS	
MW-6S	1.6		1.4		1.6		1.1		NS		NS		NS		NS	
MW-7S	0.0019		0.0023		0.0050	U	0.10	U	NS		NS		NS		NS	
MW-8S	32		32		40		41		NS		NS		NS		NS	
MW-9S	12		23		80		88		79		38		19		2.9	
MW-10S	0.64		0.61		0.59		0.61		1.1		0.95		3.3		2.3	
MW-11S	2.5		1.8		3.6		9.7		NS		NS		NS		NS	
MW-12S	120		110		67		59		NS		NS		NS		NS	
MW-13S	NS		NS		NS		NS		NS		NS		9.1		220	
MW-1I	0.0012		0.0025		0.83		0.13		NS		NS		NS		NS	
MW-2I	0.0014		0.0010		0.58		0.10	U	0.019		0.012		0.0069		0.0062	
MW-3I	0.39		0.39		0.38		0.10	U	NS		NS		NS		NS	
MW-4I	0.0017		0.0029		0.015		0.10	U	0.12		0.0050	U	0.055		0.0050	U
MW-5I	0.0014		0.0025		0.0050	U	0.10	U	NS		NS		NS		NS	
MW-6I	0.0015		0.0028		0.0050	U	0.13		NS		NS		NS		NS	
MW-7I	0.0012		0.0026		0.0059		0.10	U	NS		NS		NS		NS	
MW-8I	0.011		0.0012		0.0050	U	0.10	U	NS		NS		NS		NS	
MW-9I	0.0061		0.0010		0.18		0.10	U	0.0010	U	0.0050	U	0.019		0.0050	U
MW-10I	0.0023		0.0038		0.0050	U	0.10	U	0.0010	U	0.0050	U	0.0050	U	0.0050	U
MW-11I	0.067		0.025		0.12		0.80		NS		NS		NS		NS	
MW-12I	0.13		0.22		0.098		1.0		NS		NS		NS		NS	
MW-13I	NS		NS		NS		NS		NS		NS		0.30		0.25	

Notes:

Results shown are in mg/L.

Detection limit changed in 3Q17 event due to the analytical laboratory changing the analytical method for testing.

NS: Not sampled

Data Qualifiers:

U: Constituent was not detected, reporting limit is shown

J: Constituent was detected, concentration is estimated

B: Constituent was detected in an associated blank sample

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Table 2: Dissolved Lead Concentrations by Well and Groundwater Monitoring Event

Well Location	3Q 2011	Qual	4Q 2011	Qual	2Q 2012	Qual	3Q 2012	Qual	4Q 2012	Qual	1Q 2013	Qual	2Q 2013	Qual	3Q 2013	Qual	4Q 2013	Qual	1Q 2014	Qual	2Q 2014	Qual	3Q 2014	Qual	4Q 2014	Qual	1Q 2015	Qual	2Q 2015	Qual
MW-1S	0.010	U	0.010	U	0.010	U	0.010	U	0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-2S	0.010	U	0.010	U	0.010	U	0.010	U	0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-3S	0.0052	J	0.30		0.28		0.034		0.13		0.11	B	0.15	B	0.090		0.18		0.13		0.083		0.094		0.14		0.15		0.14	
MW-4S	0.010	U	0.0022	J	0.0020	J	0.010	U	0.0010	U	0.00010	U	0.00072	UB	0.00015		0.00040	U	0.00040	U	0.00044		0.00053		0.00097		0.00061		0.00072	
MW-5S	0.010	U	0.010	U	0.010	U	0.010	U	0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-6S	0.022		0.0032	J	0.010	U	0.010	U	0.0031		0.00062	UB	0.00081	B	0.00037		0.00040	U	0.00040	U	0.00064		0.0013		0.00092		0.0012		0.00042	
MW-7S	0.012		0.010	U	0.010	U	0.010	U	0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00065		0.00040	U	0.0012		0.00040	U
MW-8S	NS		NS		NS		NS		0.0012		0.00010	U	0.00010	U	0.00024		0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-9S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.00040	U	0.00040	U	0.00040	U
MW-10S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.017		0.023		0.027	
MW-11S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.027		0.052		0.047	
MW-12S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.087		0.010		0.019	
MW-13S	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS	
MW-1I	NS		NS		NS		NS		0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-2I	NS		NS		NS		NS		0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00043		0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-3I	NS		NS		NS		NS		0.014		0.00084	UB	0.0010	UB	0.00026		0.00040	U	0.00040	U	0.0011		0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-4I	NS		NS		NS		NS		0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-5I	NS		NS		NS		NS		0.0010	U	0.00010	UB	0.00011	UB	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-6I	NS		NS		NS		NS		0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-7I	NS		NS		NS		NS		0.0010	U	0.00010	U	0.00010	U	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-8I	NS		NS		NS		NS		0.0010	U	0.00050	U	0.00010	UB	0.00010	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U	0.00040	U
MW-9I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.0031		0.00040	U	0.00040	U
MW-10I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.00040	U	0.00040	U	0.00040	U
MW-11I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.00040	U	0.015		0.023	
MW-12I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		0.00097		0.00040	U	0.00040	U
MW-13I	NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS		NS	

Notes:

Results shown are in mg/L.

Detection limit changed in 3Q17 event due to the analytical laboratory changing the analytical method for testing.

NS: Not sampled

Data Qualifiers:

U: Constituent was not detected, reporting limit is shown

J: Constituent was detected, concentration is estimated

B: Constituent was detected in an associated blank sample

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Table 2: Dissolved Lead Concentrations by Well and Groundwater Monitoring Event

Well Location	3Q 2015	Qual	4Q 2015	Qual	3Q 2016	Qual	3Q 2017	Qual	3Q 2018	Qual	3Q 2019	Qual	3Q 2020	Qual	3Q 2021	Qual
MW-1S	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-2S	0.00040	U	0.00040	U	0.0020	U	0.080	U	0.0010	U	0.0040	U	0.0040	U	0.0020	U
MW-3S	0.083		0.14		0.10		0.11		NS		NS		NS		NS	
MW-4S	0.00080		0.00070		0.0020	U	0.080	U	0.10	U	0.0040	U	0.0040	U	0.0044	
MW-5S	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-6S	0.0013		0.0012		0.0020	U	0.080	U	NS		NS		NS		NS	
MW-7S	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-8S	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-9S	0.00040	U	0.00040	U	0.0020	U	0.080	U	0.0010	U	0.0040	U	0.0040	U	0.0020	U
MW-10S	0.042		0.031		0.018		0.080	U	0.077		0.096		0.25		0.061	
MW-11S	0.058		0.087		0.15		0.27		NS		NS		NS		NS	
MW-12S	0.060		0.051		0.0020	U	0.080	U	NS		NS		NS		NS	
MW-13S	NS		NS		NS		NS		NS		NS		0.28		0.31	
MW-1I	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-2I	0.00040	U	0.00040	U	0.0020	U	0.080	U	0.0010	U	0.0040	U	0.0040	U	0.0020	U
MW-3I	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-4I	0.00040	U	0.00040	U	0.0020	U	0.080	U	0.0010	U	0.0040	U	0.0040	U	0.0020	U
MW-5I	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-6I	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-7I	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-8I	0.00040	U	0.00040	U	0.0020	U	0.080	U	NS		NS		NS		NS	
MW-9I	0.00040	U	0.00040	U	0.0020	U	0.080	U	0.0010	U	0.0040	U	0.0040	U	0.0020	U
MW-10I	0.00040	U	0.00040	U	0.0020	U	0.080	U	0.0010	U	0.0040	U	0.0040	U	0.0020	U
MW-11I	0.014		0.0040		0.042		0.12		NS		NS		NS		NS	
MW-12I	0.00040	U	0.0011		0.0020	U	0.080	U	NS		NS		NS		NS	
MW-13I	NS		NS		NS		NS		NS		NS		0.0067		0.0020	U

Notes:

Results shown are in mg/L.

Detection limit changed in 3Q17 event due to the analytical laboratory changing the analytical method for testing.

NS: Not sampled

Data Qualifiers:

U: Constituent was not detected, reporting limit is shown

J: Constituent was detected, concentration is estimated

B: Constituent was detected in an associated blank sample

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Table 3: pH by Well and Groundwater Monitoring Event

Well ID	3Q11	4Q11	2Q12	3Q12	4Q12	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15	3Q16	3Q17	3Q18	3Q19	3Q20	3Q21
MW-1S	6.7	6.6	6.5	6.8	6.8	8.5	6.7	6.5	6.6	7.1	6.0	7.0	6.6	6.5	6.7	7.5	6.3	6.6	6.6	NS	NS	NS	NS
MW-2S	6.8	7.0	6.4	6.7	6.7	8.5	6.7	6.7	6.7	7.0	6.5	6.9	6.6	6.5	6.9	7.5	6.3	6.5	6.5	6.7	6.8	6.4	6.7
MW-3S	7.5	7.1	7.0	7.6	7.4	8.5	7.2	7.5	7.6	7.6	6.4	7.7	7.0	6.9	7.1	7.9	6.8	7.1	7.1	NS	NS	NS	NS
MW-4S	9.1	6.7	6.5	7.0	6.7	8.3	6.1	6.9	6.5	6.9	6.2	7.0	6.6	6.5	6.7	7.5	6.1	6.7	7.5	6.8	6.9	7.0	6.9
MW-5S	8.5	6.8	6.1	6.7	6.4	7.9	6.4	6.5	6.4	6.8	5.8	6.9	6.4	6.4	6.7	6.9	6.3	6.7	6.5	NS	NS	NS	NS
MW-6S	7.3	6.9	6.5	7.0	6.8	7.9	6.3	6.3	6.6	8.9	5.9	6.8	6.6	6.5	6.7	7.2	6.1	6.7	6.5	NS	NS	NS	NS
MW-7S	11.0	7.0	6.6	7.3	6.9	9.1	6.9	7.2	6.9	7.2	6.2	7.1	6.8	6.8	6.9	7.6	6.6	6.8	6.5	NS	NS	NS	NS
MW-8S	NS	NS	NS	NS	7.0	NS	7.0	7.4	7.6	7.5	7.5	8.3	7.3	7.5	7.4	8.4	7.1	7.2	6.8	NS	NS	NS	NS
MW-9S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.7	6.6	6.9	7.7	6.5	6.8	6.5	6.8	7.0	7.0	7.2
MW-10S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.8	6.6	6.9	7.6	6.4	6.8	6.7	6.3	6.8	7.0	6.9
MW-11S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.4	6.5	6.8	7.6	6.4	6.7	7.5	NS	NS	NS	NS
MW-12S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.8	6.5	6.7	7.6	6.3	6.5	6.3	NS	NS	NS	NS
MW-13S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	12.0	12.0
MW-1I	NS	NS	NS	NS	7.2	8.1	6.9	6.8	6.9	7.2	6.5	7.3	6.8	6.7	7.0	7.7	6.6	6.9	6.7	NS	NS	NS	NS
MW-2I	NS	NS	NS	NS	7.8	8.6	7.0	7.0	7.1	7.4	7.1	7.4	6.9	6.8	7.2	7.9	6.8	6.9	6.7	7.1	7.6	7.4	7.8
MW-3I	NS	NS	NS	NS	8.7	9.2	7.6	7.6	7.7	8.0	8.1	8.4	7.5	7.5	7.7	8.5	7.3	7.6	7.5	NS	NS	NS	NS
MW-4I	NS	NS	NS	NS	8.1	7.9	7.0	7.3	7.2	7.4	6.4	7.6	7.3	7.0	7.2	8.0	6.7	7.2	6.9	7.1	7.6	7.5	7.6
MW-5I	NS	NS	NS	NS	7.7	8.0	9.0	7.2	7.2	7.4	6.1	7.6	7.1	7.0	7.2	7.6	6.7	7.1	6.8	NS	NS	NS	NS
MW-6I	NS	NS	NS	NS	7.4	7.5	7.0	6.5	6.8	7.0	6.5	6.9	6.8	6.0	6.8	7.5	6.4	6.8	6.4	NS	NS	NS	NS
MW-7I	NS	NS	NS	NS	7.2	8.9	7.1	7.2	7.0	7.3	6.6	7.2	6.8	6.8	7.0	8.3	6.6	6.8	6.6	NS	NS	NS	NS
MW-8I	NS	NS	NS	NS	8.0	8.7	7.4	7.3	7.6	7.8	7.1	7.9	7.0	7.2	7.6	8.4	7.3	7.5	7.3	NS	NS	NS	NS
MW-9I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.2	7.4	7.6	8.6	7.4	7.6	7.1	7.3	8.0	8.1	8.0
MW-10I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.2	7.0	7.4	8.1	7.1	7.2	7.0	7.3	7.1	7.3	7.2
MW-11I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.5	7.4	7.6	NS	7.3	7.1	6.8	NS	NS	NS	NS
MW-12I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.5	7.5	7.7	8.5	7.3	7.6	7.2	NS	NS	NS	NS
MW-13I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.5	7.8

Notes:

NS: not sampled

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Table 4: Eh by Well and Groundwater Monitoring Event

Well ID	3Q11	4Q11	2Q12	3Q12	4Q12	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15	3Q16	3Q17	3Q18	3Q19	3Q20	3Q21
MW-1S	121	82	66	98	103	96	55	103	82	39	104	-28	81	-6	-16	10	41	30	71	NS	NS	NS	NS
MW-2S	89	55	62	98	100	80	45	82	69	32	48	-20	88	-19	-58	20	41	31	63	143	107	147	104
MW-3S	58	78	36	62	112	90	49	48	45	33	60	-47	59	-32	14	-10	5	-1	89	NS	NS	NS	NS
MW-4S	58	92	49	3	97	68	76	32	42	31	27	-27	58	-14	113	6	27	17	82	425	109	79	118
MW-5S	69	89	1	102	119	90	53	69	66	42	60	-17	80	-22	6	14	31	24	60	NS	NS	NS	NS
MW-6S	32	60	59	89	77	80	84	100	78	45	81	-22	75	-16	51	8	45	29	69	NS	NS	NS	NS
MW-7S	58	66	76	90	53	82	52	52	64	38	29	-38	81	-7	-6	-5	18	24	87	NS	NS	NS	NS
MW-8S	NS	NS	NS	NS	93	NS	24	56	36	20	-1	-65	38	-49	-65	-20	5	2	61	NS	NS	NS	NS
MW-9S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	62	-74	-60	-20	12	10	47	282	54	65	32
MW-10S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	92	-92	-34	-6	27	27	63	270	89	77	78
MW-11S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	31	-23	-27	-6	21	31	76	NS	NS	NS	NS
MW-12S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	100	15	30	40	45	71	120	NS	NS	NS	NS
MW-13S	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	25	-129
MW-1I	NS	NS	NS	NS	132	143	94	134	115	77	104	15	126	39	31	24	65	58	262	NS	NS	NS	NS
MW-2I	NS	NS	NS	NS	82	87	50	104	79	45	93	-18	91	-8	-36	-2	30	37	90	270	58	340	400
MW-3I	NS	NS	NS	NS	183	30	11	73	31	-5	-34	-66	28	-64	-79	-36	-15	-10	187	NS	NS	NS	NS
MW-4I	NS	NS	NS	NS	138	101	70	68	49	31	54	-32	59	-7	116	-6	40	26	72	469	307	110	68
MW-5I	NS	NS	NS	NS	82	89	-72	76	62	32	77	-36	51	-18	55	2	42	34	60	NS	NS	NS	NS
MW-6I	NS	NS	NS	NS	102	122	74	125	95	76	74	5	97	-2	73	6	46	36	86	NS	NS	NS	NS
MW-7I	NS	NS	NS	NS	74	66	41	80	65	39	23	-21	92	-1	7	2	41	50	115	NS	NS	NS	NS
MW-8I	NS	NS	NS	NS	104	79	39	79	53	18	45	-38	46	-17	2	-16	23	5	53	NS	NS	NS	NS
MW-9I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	57	-129	-81	-56	-23	-21	46	366	18	11	36
MW-10I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	89	-30	1	-14	29	21	71	365	306	77	93
MW-11I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	21	-42	-30	NS	13	45	91	NS	NS	NS	NS
MW-12I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	37	-72	-70	-36	-15	-7	50	NS	NS	NS	NS
MW-13I	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	99	151

Notes:

Eh values were calculated from the final field oxidation reduction potential results during water quality parameter stabilization (see Appendix A) by adding the correction factor of 200. Eh values are shown in millivolts.

NS: not sampled

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Figures

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Legend

Superlon Property Boundary

0 400 800 1,200 Feet

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Superlon Property Location
2021 Groundwater Monitoring Report
Superlon Plastics Property, Tacoma, Washington

Figure 1

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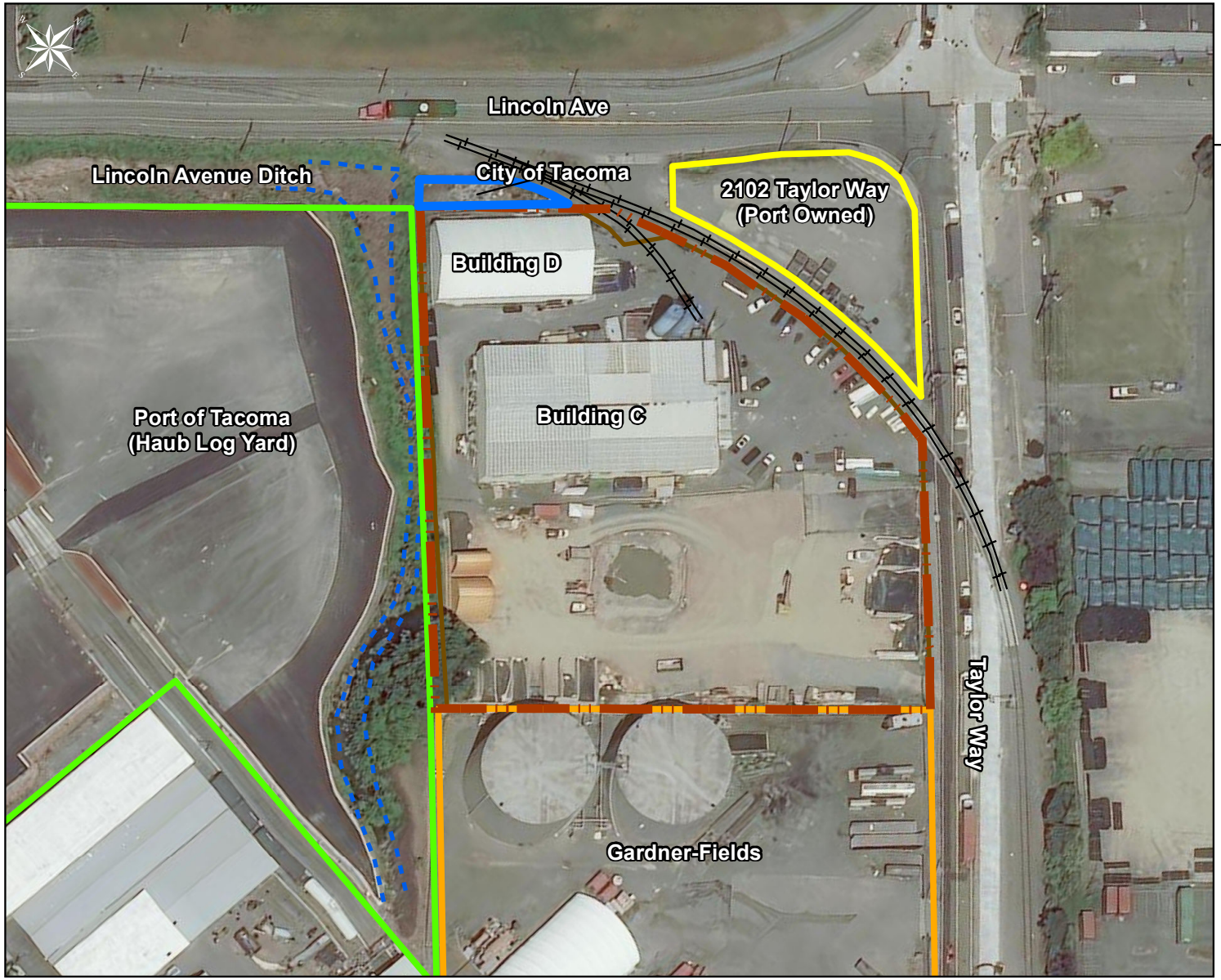

Legend

- Superlon Property Boundary
- City of Tacoma
- Gardner-Fields
- Port of Tacoma
- 2102 Taylor Way (Port Owned)
- Railroad
- Fence
- Ditch

0 50 100 150 200 Feet

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Property Features
2021 Groundwater Monitoring Report
Superlon Plastics Property, Tacoma, Washington

Figure 2

Document Path: G:\Projects\Superlon\Maps\2021\Annual GWM Report\Figure 2_Site Features.mxd; Author: SM; Date Saved: 12/10/2021

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Legend

Monitoring Wells
- Shallow Aquifer
- Intermediate Aquifer
- Decommissioned Well

Property Features
- Railroad
- Fence
- Ditch
- Property Boundary

0 50 100 Feet

PIONEER TECHNOLOGIES CORPORATION

Monitoring Well Locations
2021 Groundwater Monitoring Report
Superlon Plastics Site, Tacoma, Washington

Figure 3

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Legend

Monitoring Wells
- Shallow Aquifer
- Decommissioned Well

Property Features
- Railroad
- Fence
- Ditch
- Property Boundary

Notes:
- U: constituent was not detected, reporting limit is shown
- mg/L: milligrams per liter

0 50 100 Feet

PIONEER TECHNOLOGIES CORPORATION

Dissolved Arsenic in Shallow Aquifer
2021 Groundwater Monitoring Report
Superlon Plastics Site, Tacoma, Washington

Figure 4

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Legend

Monitoring Wells
- Intermediate Aquifer
- Decommissioned Well

Property Features
- Railroad
- Fence
- Ditch
- Property Boundary

Notes:
- U: constituent was not detected, reporting limit is shown
- mg/L: milligrams per liter

0 50 100 Feet

PIONEER TECHNOLOGIES CORPORATION

Dissolved Arsenic in Intermediate Aquifer
2021 Groundwater Monitoring Report
Superlon Plastics Site, Tacoma, Washington

Figure 5

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Legend

Monitoring Wells
- Shallow Aquifer
- Decommissioned Well

Property Features
- Railroad
- Fence
- Ditch
- Property Boundary

Notes:
- U: constituent was not detected, reporting limit is shown
- mg/L: milligrams per liter

0 50 100 Feet

PIONEER TECHNOLOGIES CORPORATION

Dissolved Lead in Shallow Aquifer
2021 Groundwater Monitoring Report
Superlon Plastics Site, Tacoma, Washington

Figure 6

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Legend

Monitoring Wells
- Intermediate Aquifer
- Decommissioned Well

Property Features
- Railroad
- Fence
- Ditch
- Property Boundary

Notes:
- U: constituent was not detected, reporting limit is shown
- mg/L: milligrams per liter

0 50 100 Feet

PIONEER TECHNOLOGIES CORPORATION

Dissolved Lead in Intermediate Aquifer
2021 Groundwater Monitoring Report
Superlon Plastics Site, Tacoma, Washington

Figure 7

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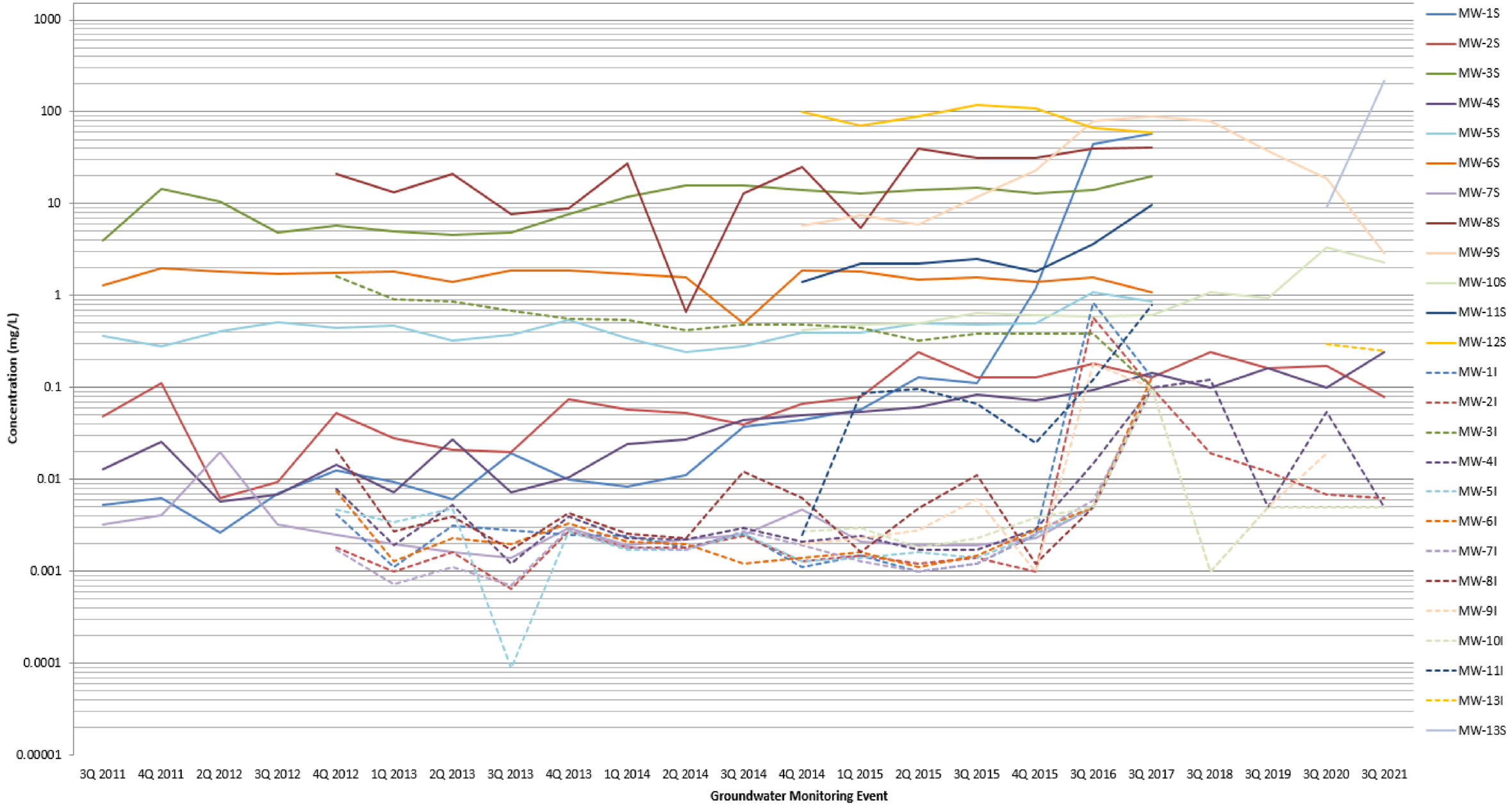

PIONEER TECHNOLOGIES CORPORATION

Dissolved Arsenic Trend in the Shallow and Intermediate Aquifers
2021 Groundwater Monitoring Report
Superlon Plastics Property, Tacoma, Washington

Figure 8

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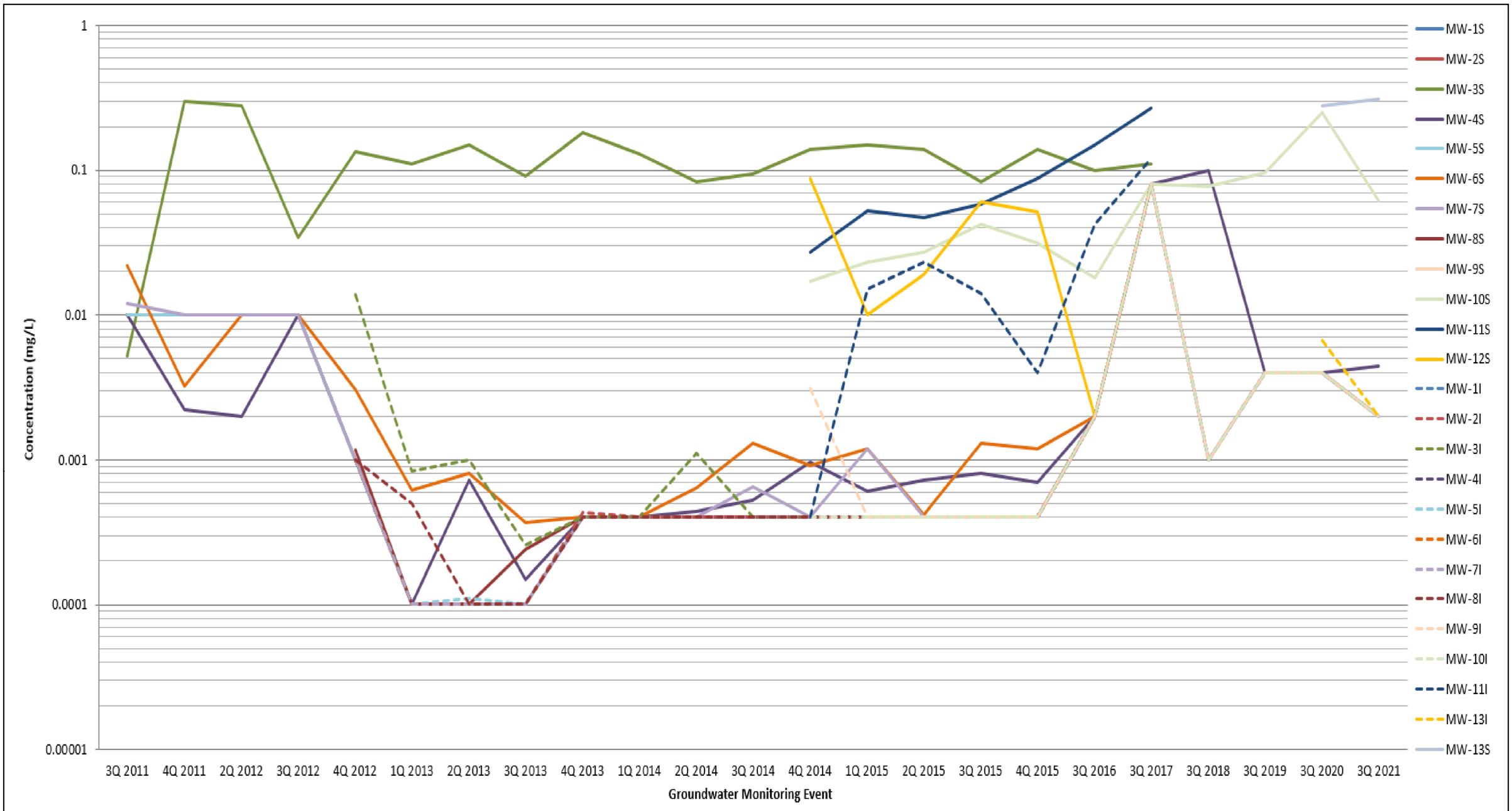

PIONEER TECHNOLOGIES CORPORATION

Dissolved Lead Trend in the Shallow and Intermediate Aquifers
2021 Groundwater Monitoring Report
Superlon Plastics Property, Tacoma, Washington

Figure 9

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Appendix A

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PIONEER TECHNOLOGIES CORPORATION (PIONEER)
GROUNDWATER MONITORING FORM

Stabilization:
SWL < 0.33 ft | Turb ± 10%
pH ± 0.1 | DO ± 0.3 mg/L
SC, Temp ± 3% | ORP ± 10 mV

SITE NAME: Superion FIELD TECHNICIAN(S): KM/MK DATE: 10/7/21

WELL INFO				DTW				PURGING											SAMPLE COLLECTION		PURGE WATER	
										Stabilization												
Well ID	Total Depth (ft)	Screen Interval (ft)	Current Condition (e.g., seal, cover, cap, casing, lock)	Time	Depth to NAPL (ft)	Depth to Water (ft)	NAPL Thick. (ft)	Pump Type	Intake Depth (ft)	Elaps. Time (min)	Flow Rate (L/min)	SWL (ft)	pH	Spec. Cond. (mS/cm)	Turb (NTU)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Time	Field Kit Results / General Comments	Vol (gal)	Disposal / Storage Comments
2I	47.2	35-45	Good; No lock	805		10.1'		Peri	~12'	805	~100	10.19	7.67	1.493	3.79	2.81	11.9	210.4	820	No odor; Colorless		SW POND ON-SITE
										808		10.20	7.68	1.504	3.78	1.13	12.4	207.8				
										811		10.20	7.70	1.507	3.91	0.77	12.4	203.7				
										815		10.20	7.76	1.508	3.78	0.61	12.5	200.1				
										818		10.20	7.77	1.509	3.92	0.55	12.5	199.8				
13S	23.7		Good; Rusted Cap	848		6.25'			~8'	854	~100	7.00	11.75	1.703	11.71	2.52	15.6	-15.5	920	No odor; high Turbid		
										857		7.05	11.79	1.819	14.30	0.35	15.7	-209.6				
										900		7.05	11.80	1.840	17.10	0.26	15.5	-235.4				
										903		6.80	11.80	1.861	20.21	0.24	15.1	-240.3				
										906		6.57	11.82	1.860	25.51	0.24	15.1	-260.2				
										909		6.45	11.92	2.140	26.91	0.18	14.1	-303.1				
X	X	X	X	X	X	X	X		X	912		6.55	11.98	2.168	30.22	0.16	14.1	-319.2		X	X	X
										915		6.45	11.99	2.181	32.86	0.12	14.2	-323.9				
										918		6.46	11.99	2.183	33.11	0.11	14.3	-329.2				
										X	X	X	X	X	X	X	X	X				
4S	22.5	19-24	Good; Cap has wrong screws	943		5.25			~8'	957	~100	5.25	6.88	2.052	5.07	2.34	15.0	-74.7	1007	No odor Colorless; some silt		
										1000		5.26	6.88	2.081	5.50	0.81	15.0	-78.4				
										1003		5.26	6.89	2.089	5.82	0.52	15.0	-80.3				
										1006		5.27	6.89	2.092	6.04	0.50	15.0	-81.8				
										X	X	X	X	X	X	X	X	X				
13I	49.1		good	1041		6.7			~8'	1045	~100	6.75	7.85	2.281	18.3	2.95	15.7	51.9	1105	micro bubbles, onysi messed w/ readings No odor		
										1048		6.76	7.85	2.295	32.81	1.19	15.4	-8.3				
										1051		6.75	7.84	2.292	50.71	0.69	15.1	-30.0				
										1054		6.75	7.84	2.305	64.17	0.56	15.0	-47.9				
										1057		6.75	7.84	2.303	85.92	0.47	15.0	-52.5				
										1100		6.75	7.84	2.301	117.77	0.41	15.0	-50.8				
										1103		6.80	7.83	2.303	118.91	0.39	14.9	-49.4				
										X	X	X	X	X	X	X	X	X				

PIONEER TECHNOLOGIES CORPORATION (PIONEER)
GROUNDWATER MONITORING FORM

Stabilization:
SWL < 0.33 ft | Turb ± 10%
pH ± 0.1 | DO ± 0.3 mg/L
SC, Temp ± 3% | ORP ± 10 mV

SITE NAME: Superlon **FIELD TECHNICIAN(S):** HM/MK **DATE:** 10/7/21

WELL INFO				DTW				PURGING											SAMPLE COLLECTION		PURGE WATER	
										Stabilization												
Well ID	Total Depth (ft)	Screen Interval (ft)	Current Condition (e.g., seal, cover, cap, casing, lock)	Time	Depth to NAPL (ft)	Depth to Water (ft)	NAPL Thick. (ft)	Pump Type	Intake Depth (ft)	Elaps. Time (min)	Flow Rate (L/min)	SWL (ft)	pH	Spec. Cond. (mS/cm)	Turb (NTU)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Time	Field Kit Results / General Comments	Vol (gal)	Disposal / Storage Comments
9I	48.95	41-51	good	1230		9.50		Peri	~12'	1235	~100	9.60	8.02	4.365	6.54	1.76	16.9	120.0		Strong Odor, Colorless		SW POND ON-SITE
										1238		9.60	8.02	4.399	26.67	0.60	16.9	-147.6				
										1241		9.60	8.02	4.409	49.93	0.49	16.8	-156.2				
										1244		9.58	8.03	4.399	151.31	0.47	16.6	-162.0	1257			
										1247		9.62	8.03	4.386	191.53	0.32	16.6	-163.3				
										1250		9.62	8.03	4.413	190.44	0.31	16.6	-163.9				
										1253		9.64	8.03	4.410	188.36	0.30	16.7	-164.3				
10I	45.32	39-49	good	1352		10.40			~13'	1355	~100	10.40	7.22	6.067	57.31	1.86	15.0	-66.9		Colorless, No odor		
										1358		10.40	7.21	6.035	117.46	0.55	15.6	-91.6				
										1401		10.40	7.22	6.035	310.84	0.46	15.5	-101.5				
										1404		10.40	7.21	6.051	311.11	0.42	16.0	-102.3	1414			
										1407		10.40	7.21	6.063	285.01	0.37	16.2	-104.3				
										1410		10.40	7.21	6.047	306.01	0.32	15.7	-105.2				
										1413		10.40	7.21	6.052	291.57	0.31	15.9	-106.8				
10S	27.60	16-26	good	1426		9.91			~12'	1426	~100	9.91	7.08	2.257	16.34	1.36	17.0	-122.6		Brown, No odor		
										1429		9.91	7.00	2.190	100.56	0.57	16.9	-120.2				
										1432		9.91	6.99	2.284	182.44	0.40	17.0	-119.1				
										1435		9.91	6.98	2.326	240.01	0.41	16.9	-120.8	1443			
										1438		9.91	6.93	2.333	243.11	0.32	16.6	-121.6				
										1441		9.91	6.93	2.328	261.44	0.29	16.7	-122.1				

PIONEER TECHNOLOGIES CORPORATION (PIONEER)
GROUNDWATER MONITORING FORM

Stabilization:	
SWL < 0.33 ft	Turb ± 10%
pH ± 0.1	DO ± 0.3 mg/L
SC, Temp ± 3%	ORP ± 10 mV

SITE NAME: Spencer **FIELD TECHNICIAN(S):** MK / HB **DATE:** 10/7/21

WELL INFO				DTW				PURGING											SAMPLE COLLECTION		PURGE WATER	
										Stabilization												
Well ID	Total Depth (ft)	Screen Interval (ft)	Current Condition (e.g., seal, cover, cap, casing, lock)	Time	Depth to NAPL (ft)	Depth to Water (ft)	NAPL Thick. (ft)	Pump Type	Intake Depth (ft)	Elaps. Time (min)	Flow Rate (L/min)	SWL (ft)	pH	Spec. Cond. (mS/cm)	Turb (NTU)	D.O. (mg/L)	Temp (°C)	ORP (mV)	Time	Field Kit Results / General Comments	Vol (gal)	Disposal / Storage Comments
MW-25	~26	19-25	- good	7:40	-	4.79	-	Peri	~13	7:42	~100	4.79	6.74	0.646	5.14	0.98	12.5	-82.9	7:54	- slight sulfur odor - clear	~1.5	storm water pond on-site
										7:45		9.79	6.74	0.648	9.04	0.60	12.1	-91.3				
										7:48		9.80	6.73	0.654	8.90	0.50	12.1	-94.0				
										7:51		9.80	6.72	0.650	8.81	0.38	12.0	-95.9				
										7:54		9.90	6.71	0.650	7.73	0.36	11.9	-96.5				
MW-4I	~56.5	43-53	- good	09:40	-	5.50	-	Peri	~8	09:49	~100	5.65	7.69	1.959	306.1	0.91	15.2	-114.5	09:55	- minor bubbles - clear - no odor	~1.5	
										09:52		5.65	7.63	1.962	330.4	0.34	15.3	-125.1				
										09:55		5.65	7.63	1.971	320.1	0.28	15.2	-131.6				
MW-9S	~21.6	21-31	- good	12:30	-	9.65	-	Peri	~12	12:41	~100	9.70	7.21	3.396	88.12	1.31	16.4	-172.6	12:56	- light br. - clear - no odor	~1.5	
										12:44		9.70	7.20	3.404	128.1	1.01	18.2	-169.3				
										12:47		9.65	7.19	3.413	130.5	0.51	18.0	-169.9				
										12:50		9.65	7.19	3.424	80.32	0.37	17.9	-169.0				
										12:53		9.55	7.19	3.423	77.34	0.26	17.5	-167.5				
										12:56		9.55	7.18	3.415	76.21	0.22	17.2	-167.8				

Construction Site Monitoring Well Hazards Assessment Form

If "Yes" for any items listed below DO NOT APPROACH MW and initiate Management of Change to ensure hazards are eliminated and/or mitigated before starting work ; see PSA

Inspectors: MK / HB Date: 10/7/2021

Monitoring Well (MW) ID	(1) Is the MW located in a depression that is greater than 2 feet? (Y/N)	(2) Does the path to the MW include a slope steeper than 4:1? (Y/N)	(3) Are there any tripping hazards in the (1) approach to the well or (2) in the immediate area of the well? (Y/N)	If yes for (3), can the tripping hazard(s) not be easily eliminated and/or mitigated (e.g., clearly flagged and avoided)? (Y/N)	(4) Is heavy equipment or are vehicles operating near the MW? (Y/N)	(5) Are there any overhead obstructions or equipment near the MW? (Y/N)	(6) Are there any other safety concerns associated with approaching the MW? (Y/N)	Comments
MW-2S	N	N	N	N	N	N	N	
MW-4I	N	N	N	N	N	N	N	
MW-9S	N	N	N	N	N	N	N	
MW-10I	N	Y	N	N	N	N	Y	-across ditch on slope, risk mitigated. MOC w/ AM.
MW-10S	N	Y	N	N	N	N	Y	

Construction Site Monitoring Well Hazards Assessment Form

If "Yes" for any items listed below DO NOT APPROACH MW and initiate Management of Change to ensure hazards are eliminated and/or mitigated before starting work ; see PSA

Inspectors: HM

Date: 10/7/21

Monitoring Well (MW) ID	(1) Is the MW located in a depression that is greater than 2 feet? (Y/N)	(2) Does the path to the MW include a slope steeper than 4:1? (Y/N)	(3) Are there any tripping hazards in the (1) approach to the well or (2) in the immediate area of the well? (Y/N)	If yes for (3), can the tripping hazard(s) not be easily eliminated and/or mitigated (e.g., clearly flagged and avoided)? (Y/N)	(4) Is heavy equipment or are vehicles operating near the MW? (Y/N)	(5) Are there any overhead obstructions or equipment near the MW? (Y/N)	(6) Are there any other safety concerns associated with approaching the MW? (Y/N)	Comments
mw-2I	N	N	N		Y	N	N	waited for daylight; waited for off-haul trucks to leave site
mw-13S	N	N	N		Y	N	N	
mw-4S	N	N	Y	N	N	N	N	curbing; old storage area
mw-13I	N	N	N		Y	N	N	
mw-9I	N	N	N		Y	N	N	Port Property; Coordinated w/ Truck driving instructor
mw-10I	N	N	Y	N	N	N	Y	Ponded water; Discussed in PSA; KG audit/ oversight
mw-10S	N	N	Y	N	N	N	Y	For 10I/10S, there were less-steep slopes/switchbacks that allowed for MK to avoid steep slopes
~~MW-10I~~								

580-106507 Chain of Custody

Chain of Custody Record

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Client Contact: Hannah Morse	Sampler: HM/MK	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-44631-12635.1
Company: Pioneer Technologies Corporation	Phone:	E-Mail: m.elaine.walker@eurofinset.com	State of Origin:	Page: Page 1 of 1
Address: 5205 Corporate Ctr. Ct. SE Ste A	PWSID:	Analysis Requested		Job #:
City: Olympia	Due Date Requested:			Preservation Codes:
State, Zip: WA, 98503	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Phone: 360-570-1700(Tel)	Compliance Project: Δ Yes Δ No			
Email: morseh@uspioneer.com	PO #: Pay by Credit Card			Other:
Project Name: Superlon	WO #:			
Site:	Project #: 58010637			
	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - (MOD) Arsenic, Iron & Lead by ICPMS (wat	Total Number of containers	Special Instructions/Note:
		Preservation Code:					N		
GW-MW2I-100721	10/7/21	820		Water	N		X		
GW-MW2S-100721		754		Water	N		X		
GW-MW4I-100721		955		Water	N		X		
GW-MW4S-100721		1007		Water	N		X		
GW-MW10I-100721		1414		Water	N		X		
GW-MW10S-100721		1443		Water	N		X		
GW-MW13I-100721		1105		Water	N		X		
GW-MW13S-100721		920		Water	N		X		
GW-MW13I-100721-D		1105		Water	N		X		
GW-MW9I-100721	10/7/21	1257		Water					
GW-MW9S-100721	10/7/21	1256		Water					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Hannah Morse	10/7/21 3:30 PM	PTC	Tom Blank	10/7/21 1530	
2						
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: Sm blue/wet/none/clidro IR8A2 2.9/3.2

Ver: 06/08/2021

Appendix B

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QA/QC SOLUTIONS, LLC

James J. Mc Ateer, Jr., BS, MRSC
Managing Member
7532 Champion Hill Rd. SE
Salem, Oregon 97306
Telephone: 503.763.6948
Facsimile: 503.566.2114
Cellular: 503.881.1501
email: jjmcateer@msn.com

November 22, 2021

Jeff King, L.G.
Pacific Environmental and Redevelopment (PERC-NW)
8424 East Meadow Lake Drive
Snohomish, WA 98290

Subject: Data Validation Review for the Superlon Plastics Site Annual 2021
Groundwater Monitoring Well Sampling Event
Task Order No.: 20-1
QA/QC Solutions, LLC Project No.: 110221.1

Sent via e-mail to jking@perc-nw.com on November 22, 2021

Dear Jeff:

This letter documents the results of the data validation review for the analysis of dissolved arsenic and dissolved lead completed on groundwater samples associated with Superlon Plastic Site Annual 2021 groundwater monitoring well sampling event.

The available data reported were validated to verify applicable laboratory quality assurance and quality control (QA/QC) procedures were documented and of sufficient quality to support its intended purpose(s). A summary of the overall assessment of data quality, the data set, a summary of the analytical methods used to complete the chemical analyses, a summary of the data validation procedures used, and a summary of the reasons why data were qualified (including other items noted during data validation) is presented below.

Overall Assessment of Data Quality

Overall, the data reported are of good quality and the results for the applicable QA/QC procedures that were used by the laboratory during the analysis of the samples were acceptable. During data validation the no results required qualification at estimated (*J*), restatement as undetected (*U*), or rejection (*R*).

Data Set

The data set consisted of 11 groundwater samples, (10 filtered samples and 1 filtered field duplicate sample) which were collected on October 7, 2021. A summary of the samples collected and the analyses completed is presented in Table 1. Analyses were completed by Eurofins FGS, Seattle located in Tacoma, Washington under Laboratory Job ID 580-1006507-1.

QA/QC Solutions, LLC received an abbreviated data summary and electronic data deliverable (EDD from Pioneer Technologies, Inc. on November 2, 2021.

Analytical Methods

Analysis of dissolved arsenic and lead was completed by filtration through 0.45-µm filter at the laboratory, digestion using nitric and hydrochloric acids, and analysis by inductively coupled plasma-mass spectrometry (ICP-MS) using U.S. EPA SW-846 Method 6020B (U.S. EPA 2021). Data users should note that filtration through 0.45-µm filter is an "operational" definition and is not indicative of a "truly dissolved" water fraction.

Data Validation Procedures

Data validation procedures included evaluating a summary of the sample results and applicable quality control results that were reported by the laboratory. This level of validation is also referred to as a Stage 2A (U.S. EPA 2009) or also as an abbreviated data review. The analytical data were validated generally following the applicable guidance and requirements specified in:

- *Guidance on Environmental Data Verification and Validation* (U.S. EPA 2002).
- *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*. OSWER No. 9200.1-85. EPA 540-R-08-005. (U.S. EPA 2009).
- *National Functional Guidelines for Inorganic Data Superfund Data Review. Final*. OLEM 9240.1-66 EPA 542-R-20-006 November 2020. U.S. Environmental Protection Agency (EPA), Office of Superfund Remediation and Technology Innovation (OSRTI), Washington, DC. (U.S. EPA 2020).
- Method-specific and laboratory-established quality control requirements, as applicable.

The laboratory data deliverables that were validated included the following:

- Case narrative discussing analytical problems (if any) and procedures.
- Chain-of-custody (COC) documentation to verify completeness of the data set.
- Laboratory summary result forms to verify analytical holding times were met.
- Results for the method blank to determine whether an analyte that was reported as detected in any sample was the result of possible contamination introduced at the laboratory.
- Results for laboratory control sample (LCS) (i.e., blank spike) and duplicate LCS recoveries to assess analytical accuracy. Results for a matrix spike (MS) and matrix spike duplicate (MSD) were nor reported.
- Results for applicable laboratory duplicate LCS analysis to assess analytical precision. Results for a duplicate sample or MSD were nor reported.
- Results for the field duplicate sample to provide additional information in support of the quality assurance review.
- Laboratory summaries of analytical results.

Verification and validation of 100-percent of all applicable laboratory calculations, transcriptions, review of instrument printouts, and review of bench sheets were not completed during the data validation review. There may be analytical problems that could only be identified by reviewing every instrument printouts and associated analytical quality control results. Verification of all possible factors that could result in the

degradation of data quality was not completed nor should be inferred at this time. The laboratory case narrative did not indicate any significant problems with data that were not reviewed during data validation. The adequacy of the sampling procedures was not completed during the data validation.

Performance based control limits established by the laboratory, applicable control limits specified in the analytical methods, and best professional judgement were used to evaluate data quality and to determine if specific data required qualification. Data qualifiers were assigned during data validation following guidance specified by U.S. EPA (2002 and 2020) to the EDD when applicable QC measurement criteria were not met, and qualification of the data was warranted.

Reasons for Data Qualification

No sample results required qualification.

General Comments

In some instances, selected samples required dilution prior to analysis (as is required by the analytical methods) to obtain concentrations that were within the linear range of the instrument or to minimize the effects of matrix interferences to obtain reportable results.

This concludes the data validation review. Should you have any questions regarding the information presented herein, please contact me by telephone at 503.763.6948 or by e-mail at jjmcateer@msn.com.

Cordially,

James J. Mc Ateer, Jr., BS, MRSC
Managing Member

cc: Brad Grimsted, Pioneer Technologies Corporation via email at grimstedb@uspioneer.com
Nathan Starr, Pioneer Technologies Corporation via email at starrn@uspioneer.com
Hannah Morse, Pioneer Technologies Corporation via email at morseh@uspioneer.com

Attachment

References

U.S. EPA 2002. Guidance on Environmental Data Verification and Data Validation. EPA QA/G-8. EPA/240/R-02/004. November 2002. U.S. Environmental Protection Agency, Office of Environmental Information, Washington DC.

U.S. EPA 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. January 13, 2009.U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA 2020. National Functional Guidelines for Inorganic Data Superfund Data Review. Final. OLEM 9240.1-66 EPA 542-R-20-006. November 2020. Office of Superfund Remediation and Technology Innovation (OSRTI), U.S. Environmental Protection Agency.

U.S. EPA 2021. SW-846 on-line. Test methods for evaluating solid wastes, physical/chemical methods. https://www.epa.gov/hw-sw846/sw-846-compendium (last updated on July 30, 2021). U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC.

Table 1. Summary of Samples Collected and Analyses Completed

Sample Number	Laboratory Sample Number	Sample Date	Dissolved Arsenic and Lead by 6020B
MW2I-GW-08052020	580-106597-1	10/07/21	✓
MW2S-GW-08052020	580-106597-2	10/07/21	✓
MW4I-GW-08052020	580-106597-3	10/07/21	✓
MW4S-GW-08052020	580-106597-4	10/07/21	✓
MW10I-GW-08052020	580-106597-5	10/07/21	✓
MW10S-GW-08052020	580-106597-6	10/07/21	✓
MW13I-GW-08052020	580-106597-7	10/07/21	✓
MW13S-GW-08052020	580-106597-8	10/07/21	✓
MW13I-GW-08052020-D	580-106597-9	10/07/21	✓
MW9I-GW-08052020	580-106597-10	10/07/21	✓
MW9S-GW-08052020	580-106597-11	10/07/21	✓

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ANALYTICAL REPORT

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-106507-1
Client Project/Site: Superlon

For:
Pioneer Technologies Corporation
5205 Corporate Ctr. Ct. SE
Ste A
Olympia, Washington 98503

Attn: Brad Grimsted

M. Elaine Walker

Authorized for release by:
10/19/2021 3:51:56 PM

Elaine Walker, Project Manager II
(253)248-4972
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Table of Contents

Case Narrative

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Job ID: 580-106507-1

Laboratory: Eurofins FGS, Seattle

Narrative

Job Narrative
580-106507-1

Receipt
Eleven samples were received on 10/7/2021 3:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW2I-100721

Date Collected: 10/07/21 08:20
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-1

Matrix: Water

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.2**		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:03	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:03	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW2S-100721

Lab Sample ID: 580-106507-2

Date Collected: 10/07/21 07:54

Matrix: Water

Date Received: 10/07/21 15:30

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**78**		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:18	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:18	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW4I-100721

Date Collected: 10/07/21 09:55
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-3

Matrix: Water

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:22	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:22	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW4S-100721

Lab Sample ID: 580-106507-4

Date Collected: 10/07/21 10:07

Matrix: Water

Date Received: 10/07/21 15:30

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	240		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:26	5
Lead	4.4		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:26	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW10I-100721

Date Collected: 10/07/21 14:14
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-5

Matrix: Water

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:29	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:29	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW10S-100721

Lab Sample ID: 580-106507-6

Date Collected: 10/07/21 14:43

Matrix: Water

Date Received: 10/07/21 15:30

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2300		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:33	5
Lead	61		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:33	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW13I-100721

Lab Sample ID: 580-106507-7

Date Collected: 10/07/21 11:05

Matrix: Water

Date Received: 10/07/21 15:30

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**250**		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:37	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:37	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW13S-100721

Lab Sample ID: 580-106507-8

Date Collected: 10/07/21 09:20

Matrix: Water

Date Received: 10/07/21 15:30

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	22000		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:41	5
Lead	310		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:41	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW13I-100721-D

Date Collected: 10/07/21 11:05
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-9

Matrix: Water

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**250**		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:44	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:44	5

Client Sample Results

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW9I-100721

Date Collected: 10/07/21 12:57
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-10

Matrix: Water

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:48	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:48	5

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW9S-100721
Date Collected: 10/07/21 12:56
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-11
Matrix: Water

Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2900**		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 14:52	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 14:52	5

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-370576/13-B
Matrix: Water
Analysis Batch: 370944

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 370762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0	1.0	ug/L		10/15/21 17:51	10/18/21 13:30	5
Lead	ND		2.0	0.20	ug/L		10/15/21 17:51	10/18/21 13:30	5

Lab Sample ID: LCS 580-370576/14-B
Matrix: Water
Analysis Batch: 370944

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 370762

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1000	990		ug/L		99	80 - 120		
Lead			1000	957		ug/L		96	80 - 120		

Lab Sample ID: LCSD 580-370576/15-B
Matrix: Water
Analysis Batch: 370944

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 370762

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			1000	1000		ug/L		100	80 - 120	1	20
Lead			1000	952		ug/L		95	80 - 120	1	20

Lab Chronicle

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW2I-100721

Lab Sample ID: 580-106507-1
Date Collected: 10/07/21 08:20
Matrix: Water
Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:03	FCW	FGS SEA

Client Sample ID: GW-MW2S-100721

Lab Sample ID: 580-106507-2
Date Collected: 10/07/21 07:54
Matrix: Water
Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:18	FCW	FGS SEA

Client Sample ID: GW-MW4I-100721

Lab Sample ID: 580-106507-3
Date Collected: 10/07/21 09:55
Matrix: Water
Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:22	FCW	FGS SEA

Client Sample ID: GW-MW4S-100721

Lab Sample ID: 580-106507-4
Date Collected: 10/07/21 10:07
Matrix: Water
Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:26	FCW	FGS SEA

Client Sample ID: GW-MW10I-100721

Lab Sample ID: 580-106507-5
Date Collected: 10/07/21 14:14
Matrix: Water
Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:29	FCW	FGS SEA

Lab Chronicle

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW10S-100721

Lab Sample ID: 580-106507-6

Date Collected: 10/07/21 14:43

Matrix: Water

Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:33	FCW	FGS SEA

Client Sample ID: GW-MW13I-100721

Lab Sample ID: 580-106507-7

Date Collected: 10/07/21 11:05

Matrix: Water

Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:37	FCW	FGS SEA

Client Sample ID: GW-MW13S-100721

Lab Sample ID: 580-106507-8

Date Collected: 10/07/21 09:20

Matrix: Water

Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:41	FCW	FGS SEA

Client Sample ID: GW-MW13I-100721-D

Lab Sample ID: 580-106507-9

Date Collected: 10/07/21 11:05

Matrix: Water

Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:44	FCW	FGS SEA

Client Sample ID: GW-MW9I-100721

Lab Sample ID: 580-106507-10

Date Collected: 10/07/21 12:57

Matrix: Water

Date Received: 10/07/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:48	FCW	FGS SEA

Lab Chronicle

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Client Sample ID: GW-MW9S-100721

Date Collected: 10/07/21 12:56
Date Received: 10/07/21 15:30

Lab Sample ID: 580-106507-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			370576	10/14/21 14:35	TMH	FGS SEA
Dissolved	Prep	3005A			370762	10/15/21 17:51	JLS	FGS SEA
Dissolved	Analysis	6020B		5	370944	10/18/21 14:52	FCW	FGS SEA

Laboratory References:

FGS SEA = Eurofins FGS, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Pioneer Technologies Corporation
Job ID: 580-106507-1
Project/Site: Superlon

Laboratory: Eurofins FGS, Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-22
Washington	State	C788	07-13-22

Sample Summary

Client: Pioneer Technologies Corporation
Project/Site: Superlon

Job ID: 580-106507-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-106507-1	GW-MW2I-100721	Water	10/07/21 08:20	10/07/21 15:30
580-106507-2	GW-MW2S-100721	Water	10/07/21 07:54	10/07/21 15:30
580-106507-3	GW-MW4I-100721	Water	10/07/21 09:55	10/07/21 15:30
580-106507-4	GW-MW4S-100721	Water	10/07/21 10:07	10/07/21 15:30
580-106507-5	GW-MW10I-100721	Water	10/07/21 14:14	10/07/21 15:30
580-106507-6	GW-MW10S-100721	Water	10/07/21 14:43	10/07/21 15:30
580-106507-7	GW-MW13I-100721	Water	10/07/21 11:05	10/07/21 15:30
580-106507-8	GW-MW13S-100721	Water	10/07/21 09:20	10/07/21 15:30
580-106507-9	GW-MW13I-100721-D	Water	10/07/21 11:05	10/07/21 15:30
580-106507-10	GW-MW9I-100721	Water	10/07/21 12:57	10/07/21 15:30
580-106507-11	GW-MW9S-100721	Water	10/07/21 12:56	10/07/21 15:30

580-106507 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

Client Contact: Hannah Morse	Sampler: HM/MK	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-44631-12635.1
Company: Pioneer Technologies Corporation	Phone:	E-Mail: m.elaine.walker@eurofinset.com	State of Origin:	Page: Page 1 of 1
Address: 5205 Corporate Ctr. Ct. SE Ste A	PWSID:			Job #:
City: Olympia	Due Date Requested:			
State, Zip: WA, 98503	TAT Requested (days):			
Phone: 360-570-1700(Tel)	Compliance Project: Δ Yes Δ No			
Email: morseh@uspioneer.com	PO #: Pay by Credit Card			
Project Name: Superlon	WO #:			
Site:	Project #: 58010637			
	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - (MOD) Arsenic, Iron & Lead by ICPMS (wat	Total Number of containers	Special Instructions/Note:
		Preservation Code:			N	N			
GW-MW2I-100721	10/7/21	820		Water	N		X		
GW-MW2S-100721		754		Water	N		X		
GW-MW4I-100721		955		Water	N		X		
GW-MW4S-100721		1007		Water	N		X		
GW-MW10I-100721		1414		Water	N		X		
GW-MW10S-100721		1443		Water	N		X		
GW-MW13I-100721		1105		Water	N		X		
GW-MW13S-100721		920		Water	N		X		
GW-MW15I-100721-D		1105		Water	N		X		
GW-MW9I-100721	10/7/21	1257		Water					
GW-MW9S-100721	10/7/21	1256		Water					

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Hannah Morse	Date/Time: 10/7/21 3:30 PM	Company: PTC	Received by: Tom Blank	Date/Time: 10/7/21 1530	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: Sm blue/wet/none/clidro IR8A2 2.9/3.2

Login Sample Receipt Checklist

Client: Pioneer Technologies Corporation

Job Number: 580-106507-1

Login Number: 106507
List Number: 1
Creator: Greene, Ashton R

List Source: Eurofins FGS, Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	