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February 27, 2019

University of Washington
Capitol Projects Office
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Attention: Steve Harrison

Subject: Potential Upgradient Sources Along Tacoma Avenue South
University of Washington - Tacoma
Tacoma, Washington
File No. 0183-109-02

INTRODUCTION AND PROJECT UNDERSTANDING

This letter report summarizes the findings of the previous remedial investigations located directly upgradient and west of the University of Washington – Tacoma (UWT) Campus (Campus). UWT's Master Plan Campus boundary is situated on about 46 acres located between South 17th Street and South 21st Street and between Tacoma Avenue South and Pacific Avenue (Figure 1).

The University of Washington (UW) entered into an Agreed Order (#DE 11081) in 2016 pursuant to the authority of the Model Toxics Control Act (MTCA) and Revised Code of Washington (RCW) 70.105D.050(1). UW is required to perform a Remedial Investigation (RI), Feasibility Study (FS) and draft Cleanup Action Plan (CAP) under the Agreed Order.

UW is investigating the potential sources for the trichloroethene (TCE) and tetrachloroethene (PCE) groundwater plumes located on the western portion of the Campus as part of the RI.

Potential Sources Along Tacoma Avenue and South G Street

Five potential sources (#3 to #7) were identified directly upgradient of the UWT campus along Tacoma Avenue South and South G Street in the UWT RI Work Plan dated July 16, 2016. These five potential sources were identified based on historical uses and publicly available information. Monitoring wells have been installed upgradient and downgradient of the potential sources including the groundwater monitoring activities. Historical information is summarized below for each source.

Potential Source #3. *Camshaft Repair. 1936/1938 Tacoma Avenue South*. Delta Camshaft is listed in the city directories at 1938 Tacoma Avenue between 1983 and 2010. Operations at Delta Camshaft included grounding, deburring and coating camshafts for the engine building community based on information provided during an inspection completed in 2008 by the City of Tacoma and Washington State Department of Ecology (Ecology). Numerous housekeeping issues were observed during the inspection. The facility reportedly was discharging process water from washing the floors to the sanitary sewer without a permit. The process water reportedly exceeded the discharge limitations for the sanitary sewer but the type of contaminant was not identified.

The 2008 Ecology inspection also indicated solvents were used at this facility but the actual solvent(s) used were not identified in the inspection report. TCE is a typical solvent used to clean automobile parts. The facility was required to treat the water and obtain an Industrial Wastewater permit. The facility moved in 2010 to a new location to 2366 Tacoma Avenue. The 1936/1938 Tacoma Avenue building has since been demolished. The Ecology files indicate the new facility was listed as a hazardous waste generator for cadmium, chromium, lead and "tumbler solvent – WT02". A WT02 waste code per WAC 173-303 is a toxic dangerous waste but files reviewed do not indicate the chemical composition of the "tumbler solvent".

Potential Source #4. *Former Auto Repair. 1922 Tacoma Avenue South*. The property was developed into a 2,000 square foot tire shop with brake and alignment services in 1953. The tire shop operated under various owners until 1999 when the building was demolished. The final inspection permit record from the City of Tacoma indicated that the contractor found an underground storage tank (UST) and associated impacted soil. Ecology and/or the Tacoma-Pierce County Health Department (TPCHD) do not have records related to UST removal at this property.

Potential Source #5. *Former Auto Repair. 1902 to 1906 Tacoma Avenue South*. A multi-story building was constructed in 1891 with storefronts along Tacoma Avenue and apartments on the upper floors. Various uses of concern include Walls Transmission Service (1963), M&G Garage Automobile Repair (1963), Allen Motorcycle Sales (1953 to 1958), K W Factory Warehouse Auto Supplies (1942 to 1947). TCE is a typical solvent used to clean automobile parts. The building was demolished in 1988 followed by the construction of the existing building.

Potential Source #6. *Former Upholstery, Furniture Manufacturer, and Printing Press. 1815 South G Street.* A commercial building is identified as occupied by a furniture repair and upholstery company in the 1950 Sanborn map. The city directories indicate an upholstery business operated on the property in 1936, a cabinet maker operated on the property between 1931 and 1942, a printing press operated in 1947 and a furniture manufacturer operated between 1947 and 1963. PCE or TCE can be used in spot cleaning upholstery or in printing press operations. The commercial building was demolished in 1974 followed by construction of apartments. The apartments were demolished between 2012 and 2014 as part of the Hillside Terrace Redevelopment project. The property is currently undeveloped.

Potential Source #7. *Former Metal Photoengraving. 1722 Tacoma Avenue South.* The existing building was constructed in 1956 with a photoengraving plant operating at the property according to information reviewed in the City of Tacoma permit records. These records state there were 12 sinks and two floor drains as part of the plumbing permit. Photoengraving is used to make printing plates for various printing processes, reproducing a wide variety of graphics such as lettering, line drawings and photographs. Solvents are used in the photoengraving process.

The company was sold in 1986 and 1988 and the name changed to Western Metal Arts in 1987. Ecology records indicate that West Coast Engravers/Western Metal Arts was a hazardous waste generator between 1986 and 1989. West Coast Engravers used various acids and solvents include TCE, 1,1,1 TCA, methylene chloride, and methyl ethyl ketone in at least 1986 based on the initial hazardous waste records for this operation. The solvents, nitric acid and ferric chloride were typically redistilled and reused. Neutralized nitric acid was also discharged to the sanitary sewer system between 1986 and 1988 based on notes included on the hazardous waste forms. It appears that Western Metal Arts operated in the building until 1989 when the company moved to Kent based on the Ecology files. An awning company currently occupies the building.

GEOLOGY AND HYDROGEOLOGY

Five general soil units identified on the Campus near Tacoma Avenue consist of fill, recent fluvial deposits, ice-contact deposits, silt layer (semi-confining to confining), and advance outwash.

The general hydrogeology consists of two main water-bearing zones based on information obtained during the subsurface investigations to date. The two water-bearing zones are herein referred to as the shallow and deep aquifers. The shallow aquifer is present within the fill/ice-contact deposits and the deep aquifer is located within the advance outwash. The shallow aquifer does not appear present near South 21st Street. The recent fluvial deposits may also cut through the silt layer in some areas.

The general direction of the groundwater flow within the shallow aquifer trends topographically downgradient towards the east. Groundwater within the shallow aquifer likely flows through the sand seams and interbedded gravel within the ice-contact deposits. Groundwater flow within the shallow aquifer may also be influenced by underground utilities in the area as a preferential pathway. The groundwater flow direction is generally to the east within the shallow aquifer and to the northeast within the deep aquifer.

A more detailed discussion of site geology and hydrogeology is provided in the UWT Agreed Order RI Work Plan, dated July 7, 2016 and the 2016 Data Summary Report, dated December 20, 2017.

REMEDIAL INVESTIGATION PRELIMINARY RESULTS

Numerous monitoring wells were used in this evaluation as it relates to potential sources #3 through #7. Eight wells were installed within the shallow aquifer and eight wells within the deep aquifer (A11-MW1S/D, A11-MW7S/D, A11-MW13S/D, A11-MW14S/D, A11-MW15S/D, A11-MW17S/D, A11-MW18S/D, A11-MW20S/D[1]) in the area either downgradient or upgradient of potential sources #3 through #7 between 2016 and 2018. One well was also installed off the UWT campus and crossgradient to the potential sources (A11-MW31D) along Tacoma Avenue generally south of potential source #3. Twelve existing wells located on the UWT campus within approximately 150 feet to the east of the potential sources were used in the evaluation (A6-MW3S/D, UG-MW18, UG-MW19, UG-MW21, UG-MW24, UG-MW25S/D, UG-MW26, UG-MW37R and UG-MW38S/D). Information collected from these 12 existing wells provides useful data regarding the evaluation of the lateral extent of the groundwater plumes in this area. Groundwater monitoring and sampling was performed following well installation. The well locations are shown on

[1] S/D indicates two wells located next to each other where one well is screened in the shallow aquifer (S) and one well is screened in the deep aquifer (D).

Figure 2. The well screen interval and the location relative to the potential sources are summarized on Table 1.

Chemical Analytical Data

The chemical analytical results are summarized in Tables 1 through 3. The estimated extent of the TCE and PCE groundwater plumes are shown on Figures 2 to 6. The geologic interpretations and summary of the TCE and PCE results in the soil and TCE in the groundwater are presented in Figures 7 through 9.

Chemical analytical data was compared to screening levels that are summarized in the 2016 RI Work Plan. These screening levels were developed in accordance with MTCA (WAC 173-340-720 through 740) to help ensure that the laboratory target reporting limits are low enough to detect contaminants at levels of concern based on protection of human health and the environment. The screening levels are herein referred to as the Remedial Investigation Soil Screening Levels (RISSL) and the Remedial Investigation Groundwater Screening Levels (RIGSL).

Six groundwater plumes have been identified upgradient of the Campus to date. These six groundwater plumes include the following.

- PCE groundwater plumes were identified within the shallow and deep aquifers in the area of South 19th Street (generally in the same location). The lateral extent of these plumes to the west (upgradient) appears to be limited to the South G Street boundary.
- TCE groundwater plumes were identified within the shallow and deep aquifers between South 19th Street and South 21st Street (generally in the same location). The lateral extent of these plumes to the west (upgradient) appears to be limited to the South G Street boundary.
- A TCE and 1,1-DCA plume groundwater plume is located within the shallow aquifer near South 18th Street. The lateral extent of this plume to the west (upgradient) appears to be limited to the Court F boundary.
- A TCE plume was identified within the deep aquifer between South 17th Street and South 18th Street. The lateral extent of this plume to the west (upgradient) is currently unknown.

FINDINGS AND RECOMMENDATIONS

The following sections described the findings, interpretations and recommendations for each potential source based on the available existing information.

Potential Source #3 - Delta Camshaft

Potential Source #3 is likely contributing to the TCE-contaminated groundwater within the deep aquifer based on the following information.

- Ecology completed an inspection at this property in 2008. Numerous housekeeping issues were observed including the facility was reportedly discharging process water from washing the floors to the sanitary sewer without a permit. The process water reportedly exceeded the discharge limitations for the sanitary sewer but the type of contaminant was not identified. The 2008 Ecology

inspection also indicated solvents were used at the facility but the type of solvent was not noted. TCE is a typical solvent used to clean automobile parts.

- The shallow aquifer does not appear to be present near potential source #3 because well A11-MW1S has been dry during each monitoring event since well installation in 2016.
- TCE was detected at concentrations greater than the RISSL and RIGSL in soil and groundwater samples collected within the advance outwash (deep aquifer) in the downgradient well A11-MW1D.
- TCE was not detected in soil and groundwater samples collected from upgradient monitoring well A11-MW16D.

We recommend additional subsurface explorations on this property to further investigate the lateral extent of the TCE plume within the deep aquifer. We also recommend an interview with the former business owner to evaluate previous operation and best management practices.

Potential Source #4 - Former Auto Repair

Potential Source #4 is likely contributing to the PCE- and TCE-contaminated groundwater identified within the shallow and deep aquifers based on the following information.

- The property was developed into a 2,000-square-foot tire shop with brake and alignment services in 1953. The tire shop operated under various owners until 1999 when the building was demolished. TCE is a typical solvent used to clean automobile parts.
- TCE was detected at concentrations greater than the RISSL in soil samples collected within the ice-contact deposits and advance outwash in crossgradient wells A11-MW13D, A11-MW13S, A11-MW14D and A11-MW14S.
- TCE was detected at concentrations greater than the RIGSL in crossgradient wells A11-MW13S and A11-MW14S (shallow aquifer).
- TCE and PCE were detected at concentrations greater than the respective RIGSL in the downgradient wells on UWT campus (UG-MW18 and UG-MW19) screened within the deep aquifer.
- HVOCs were not detected in soil and groundwater samples collected in upgradient monitoring well All-MW17D.

We recommend additional subsurface explorations be completed on the property to further investigate the lateral extent of the TCE plumes within the shallow and deep aquifers and PCE plumes within the shallow and deep aquifers.

Potential Source #5 - Former Auto Repair

Potential Source #5 is likely contributing to the PCE- and TCE-contaminated groundwater in the shallow and deep aquifers based on the following information.

- Various automobile service companies operated on the property between 1942 and 1963. TCE is a typical solvent used to clean automobile parts.
- PCE was detected at concentrations greater than the RISSL in soil samples collected within the ice-contact deposits and silt layer in downgradient wells A11-MW14D and A11-MW14S. PCE was

detected at concentrations greater than the RIGSL in the groundwater sample collected in downgradient well A11-MW14S (shallow aquifer). PCE was detected at a concentration less than the RIGSL in the groundwater sample collected in downgradient A11-MW14D (deep aquifer).

- PCE was detected at concentrations greater than the RIGSL in the downgradient well UG-MW38D screened within the deep aquifer in 2013. Well UG-MW38D is located on the western portion of the UWT campus.
- TCE was detected at concentrations greater than the RISSL in soil samples collected within the ice-contact deposits and advance outwash in downgradient wells A11-MW14D and A11-MW14S.
- TCE was detected at concentrations greater than the RIGSL in the downgradient wells A11-MW14S (shallow aquifer) and A11-MW14D (deep aquifer).
- TCE was detected at concentrations greater than the RIGSL in the downgradient wells UG-MW38S (shallow aquifer) and UG-MW38D (deep aquifer) on UWT campus at least one time between 2013 and 2018.
- HVOCs were not detected in soil and groundwater samples collected in upgradient monitoring well A11-MW17D.

We recommend an on-site environmental reconnaissance including potential subsurface explorations be completed on the property to further investigate the lateral extent of the TCE plumes within the shallow and deep aquifers and PCE plumes within the shallow aquifer.

Potential Source #6 - Upholstery, Furniture Manufacturer, and Printing Press

Potential Source #6 does not appear to be contributing to the PCE- and TCE-contaminated groundwater in the shallow and deep aquifers because HVOCs (besides chloroform) were not detected in the soil and groundwater samples collected in downgradient monitoring wells A11-MW15D and A11-MW15S. Chloroform was detected at a concentration less than the RIGSL in the groundwater sample collected from All-MW15S in the 2018 monitoring event. Chloroform is a common laboratory contaminant and/or may possibly be related to chlorinated water used during the drilling process.

Potential Source #7 Former Metal Photoengraving Facility

Potential Source #7 appears to be a source of the TCE- and 1,1-DCA-contaminated groundwater identified within the shallow aquifer directly downgradient of the property and the PCE- and TCE-contaminated groundwater plumes identified at the South 19th Street and Tacoma Avenue area based on the following information.

- A metal photoengraving facility operated on the property from 1956 to 1988. Numerous sinks and floor drains were included in the building design based on a review of permit records. The engraving facility operations included use of 1,1,1-TCA and TCE products during their operations and discharging of neutralized acid to the sanitary sewer in at least 1988 based on a review of Ecology records. It appears 1,1,1-TCA and TCE may have spilled during normal operations and/or was discharged to the sanitary sewer through the sinks or floor drains in the past.
- The sanitary sewer utility trends from north to south along Tacoma Avenue. Two manholes are present between Potential Source #7 and South 19th Street as shown on Figure 2.

- PCE, TCE, 1,1,1-TCA and 1,1-DCA were not detected in the soil and groundwater samples collected in upgradient well A11-MW20S (shallow aquifer).
- PCE was detected in the downgradient well A11-MW7S (shallow aquifer). PCE was also detected in the well A11-MW14S (shallow aquifer) at South 19th Street and Tacoma Avenue.
- TCE was detected in the soil samples collected from downgradient monitoring wells A11-MW7D and A11-MW7S within the ice-contact deposits. TCE was detected at concentrations greater than the RIGSL in the groundwater samples collected in downgradient monitoring wells A11-MW7S and UG-MW25S.
- 1,1,1-TCA was detected in the ice-contact deposits soil samples collected in downgradient well A11-MW7D. 1,1,1-TCA was detected in the groundwater samples collected from A11-MW7S (shallow aquifer). 1,1,1-TCA was also detected in the well A11-MW14S (shallow aquifer) located at South 19th Street and Tacoma Avenue South.
- 1,1-DCA (a breakdown product of 1,1,1-TCA) was detected at concentrations greater than the RIGSL in the downgradient well UG-MW25S.

We recommend performing an on-site environmental reconnaissance, interviews with former operators and completing potential subsurface explorations on the property to further investigate the lateral extent of the TCE plumes within the shallow and deep aquifers. We further recommend performing an investigation of the sanitary sewer line to evaluate potential locations where leaks may have occurred in the past.

Potential Source #7 does not appear to be the source of TCE-contaminated groundwater within the deep aquifer in the area based on the following information.

- TCE was detected at concentrations greater than the RISSL in soil samples collected from 4 and 18.5 feet below ground surface (bgs) within the ice-contact deposits and 42 and 54 feet bgs within the advance outwash in downgradient monitoring wells A11-MW7D and A11-MW7S. This indicates the silt layer between 20 and 42 feet bgs is separating the two aquifers and associated contaminant plumes.
- TCE was not detected in soil collected within the ice-contact deposits or silt layer. TCE was detected at concentrations greater than the RISSL in the soil samples collected from 59 and 70 feet bgs within the advance outwash in upgradient monitoring well A11-MW20D. TCE was detected at a concentration greater than the RIGSL in the groundwater sample collected in A11-MW20D in the 2018 monitoring event.

The source of the TCE groundwater plume within the deep aquifer in the area of potential source #7 is unknown. Additional investigation is necessary to further evaluate the source and lateral extent of the TCE groundwater plume.

LIMITATIONS

We have prepared this report for the exclusive use of the University of Washington for the UWT Agreed Order - Remedial Investigation Work Plan Implementation project at the University of Washington-Tacoma Campus. University of Washington may distribute copies of this report to their authorized agents and regulatory agencies as may be required for the Project.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to this report.

Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments should be considered a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to Appendix A titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

Please contact us if you have questions regarding the information provided in this letter or if additional information is required.

Sincerely,
GeoEngineers, Inc.

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Senior Environmental Geologist

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TSD:TRM:ch

Attachments:
Table 1. Summary of Relevant Halogenated Volatile Organic Compounds Near Potential Sources #3 to #7 - Groundwater
Table 2. Summary of Volatile Organic Compounds (VOCs) For Wells Completed in 2016 and 2018 - Soil
Figure 1. Vicinity Map
Figure 2. AOC 11 - TCE and PCE Plumes
Figure 3. AOC 11 - Shallow Aquifer - PCE
Figure 4. AOC 11 - Deep Aquifer - PCE
Figure 5. AOC 11 - Shallow Aquifer - TCE
Figure 6. AOC 11 - Deep Aquifer - TCE
Figure 7. Cross Section A-A' Along South 19th Street
Figure 8. Cross Section B-B' Along South 18th Street
Figure 9. Cross Section C-C' Along Tacoma Avenue
Appendix A. Report Limitations and Guidelines for Use

Table 1

Summary of Relevant Halogenated Volatile Organic Compounds Near Potential Sources #3 to #7 - Groundwater[1]

Potential Upgradient Sources Along Tacoma Avenue South

University of Washington - Tacoma, Washington

Location Identification	Location Relative to Sources	Location to Campus	Well Screen Aquifer	TOC Elevation	Sample Identification[3]	Sample Date	Depth of Groundwater Below TOC	Water Level Elevation[4]	Date of Water Level Measurement	VOCs (µg/L)[5]										
										PCE, TCE and Associated Breakdown Products[5]						1,1,1-TCA and Associated Breakdown Products (Not Including TCE)				Other VOC
										Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	Chloroethane	Chloroform
Remedial Investigation Groundwater Screening Level (RIGSL) (µg/L)[2]										5	1.6	16	100	3.2	0.29	200	7.8	4.2	18,000	1.2
Shallow Wells																				
A6-MW3S	Crossgradient	On Campus	Shallow	220.66	A6-MW3S-161205	12/05/2016	10.28	210.38	12/27/2016	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					A6-MW3S-181005	10/05/2018	14.59	206.07	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					A6-MW3S-DUP-181005	10/05/2018	14.59	206.07	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW1S	Downgradient	Off Campus	Shallow	215.01	No GW samples	12/01/2016	--	Dry	12/27/2016	--	--	--	--	--	--	--	--	--	--	--
					No GW samples	09/24/2018	--	Dry	10/18/2018	--	--	--	--	--	--	--	--	--	--	--
A11-MW7S	Downgradient	Off Campus	Shallow	219.19	A11-MW7D-18.5-21-W	08/12/2016	18.5 to 21	Grab	12/27/2016	0.20 U	**3.1**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	**0.24**
					A11-MW7S-161202	12/02/2016	5.83	213.3	12/27/2016	2.0 U	**290**	2.0 U	2.0 U	2.0 U	*2.0 U*	**2.6**	2.0 U	2.0 U	10 U	*2.0 U*
					A11-MW7S-181004	10/04/2018	4.20	214.93	10/18/2018	**1.1**	**170**	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
A11-MW13S	Downgradient	Off Campus	Shallow	218.99	A11-MW13S-180907	09/07/2018	1.81	217.18	10/18/2018	0.20 U	**2.9**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW14S	Downgradient	Off Campus	Shallow	219.02	A11-MW14S-180919	09/19/2018	0.83	218.19	9/19/2018	**10**	**120**	1.0 U	1.0 U	1.0 U	*1.0 U*	**1.1**	1.0 U	1.0 U	5.0 U	**1.6**
A11-MW15S	Downgradient	Off Campus	Shallow	244.46	A11-MW15S-180904	09/04/2018	24.25	220.21	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	**0.21**
A11-MW17S	Upgradient	Off Campus	Shallow	265.72	A11-MW17S-181012	10/12/2018	9.19	256.53	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW18S	Upgradient	Off Campus	Shallow	266.89	No GW samples	10/12/2018	--	Dry	10/18/2018	--	--	--	--	--	--	--	--	--	--	--
A11-MW20S	Upgradient	Off Campus	Shallow	240.97	A11-MW20S-180924	09/24/2018	19.44	221.53	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	**0.80**
UG-MW25S	Downgradient	On Campus	Shallow	202.6	UG-MW25S-130904	09/04/2013	2.07	200.53	11/8/2013	2.0 U	**290**	**6.0**	2.0 U	**12**	*2.0 U*	2.0 U	**15**	2.0 U	10 U	*2.0 U*
					UG-MW25S-161212	12/12/2016	1.38	201.22	12/27/2016	*10 U*	**1,000**	**15**	10 U	**26**	*10 U*	10 U	**22**	*10 U*	50 U	*10 U*
					UG-MW25S-181003	10/03/2018	8.36	194.24	10/18/2018	2.0 U	**230**	**4.5**	2.0 U	**7.7**	*2.0 U*	2.0 U	**9.5**	2.0 U	10 U	*2.0 U*
UG-MW26	Downgradient	On Campus	Shallow	202.18	UG-MW26-130930	09/30/2013	-0.25	202.43	11/8/2013	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW26-161212	12/12/2016	0.03	202.15	12/27/2016	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW26-181004	10/04/2018	2.81	199.37	10/18/2018	0.20 U	**0.23**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
UG-MW37R	Downgradient	On Campus	Shallow	205.09	UG-MW37R-161205	12/05/2016	2.41	202.68	12/27/2016	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW37R-181003	10/03/2018	8.13	196.96	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
UG-MW38S	Downgradient	On Campus	Shallow	193.17	UG-MW38S-131001	10/01/2013	9.31	183.86	11/8/2013	0.20 U	**1.4**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U	0.20 U
					UG-MW38S-161205	12/05/2016	9.42	183.75	12/27/2016	0.20 U	**4.4**	**0.23**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					No GW samples	10/02/2018	--	Dry	10/18/2018	--	--	--	--	--	--	--	--	--	--	--

Location Identification	Location Relative to Sources	Location to Campus	Well Screen Aquifer	TOC Elevation	Sample Identification[3]	Sample Date	Depth of Groundwater Below TOC	Water Level Elevation[4]	Date of Water Level Measurement	VOCs (µg/L)[5]										
										PCE, TCE and Associated Breakdown Products[5]						1,1,1-TCA and Associated Breakdown Products (Not Including TCE)				Other VOC
										Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	Chloroethane	Chloroform
Remedial Investigation Groundwater Screening Level (RIGSL) (µg/L)[2]										5	1.6	16	100	3.2	0.29	200	7.8	4.2	18,000	1.2
Deep Aquifer Monitoring Wells																				
A6-MW3D	Crossgradient	On Campus	Deep	224.32	A6-MW3D-181004	10/04/2018	56.13	168.19	10/18/2018	0.20 U	**11**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW1D	Downgradient	Off Campus	Deep	214.96	A11-MW1D-161201	12/01/2016	37.47	177.49	12/27/2016	0.20 U	**5.4**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					A11-MW1D-180924	09/24/2018	38.30	176.66	10/18/2018	0.20 U	**7.7**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW7D	Downgradient	Off Campus	Deep	219.19	A11-MW7D-161202	12/02/2016	53.60	165.59	12/27/2016	0.20 U	**11**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					A11-MW7D-181004	10/04/2018	53.87	165.32	10/18/2018	0.20 U	**0.46**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW13D	Downgradient	Off Campus	Deep	219.13	A11-MW13D-180907	09/07/2018	43.63	175.5	10/18/2018	0.20 U	**0.32**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW14D	Downgradient	Off Campus	Deep	219.19	A11-MW14D-180919	09/19/2018	46.50	172.69	9/19/2018	**4.4**	**590**	4.0 U	4.0 U	*4.0 U*	*4.0 U*	4.0 U	4.0 U	4.0 U	20 U	*4.0 U*
A11-MW15D	Downgradient	Off Campus	Deep	244.29	A11-MW15D-180905	09/05/2018	71.01	173.28	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW16D	Upgradient	Off Campus	Deep	264.85	A11-MW16D-181009	10/09/2018	42.22	222.63	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW17D	Upgradient	Off Campus	Deep	265.57	A11-MW17D-181012	10/12/2018	79.32	186.25	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW18D	Upgradient	Off Campus	Deep	266.63	A11-MW18D-181012	10/12/2018	45.11	221.52	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW20D	Upgradient	Off Campus	Deep	241.42	A11-MW20D-180905	09/05/2018	71.97	169.45	10/18/2018	0.20 U	**1.8**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
A11-MW31D	Crossgradient	Off Campus	Deep	217.95	A11-MW31D-180906	09/06/2018	38.88	179.07	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
UG-MW18	Downgradient	On Campus	Deep	203.95	UG-MW18-051409	05/14/2009	34.22	169.73	5/15/2009	**18.0**	**1,170**	**17.5**	**0.180**	**3.10**	**0.180**	**2.73**	**0.890**	0.200 U	1.00 U	0.200 U
					UG-MW18-130614	06/14/2013	33.89	169.76	11/8/2013	**12**	**1,200**	10 U	10 U	*10 U*	*5.0 U*	10 U	*10 U*	*10 U*	50 U	*10 U*
					UG-MW18-161207	12/07/2016	33.31	170.64	12/27/2016	**14**	**700**	**4.0**	4.0 U	*4.0 U*	*4.0 U*	4.0 U	4.0 U	4.0 U	20 U	*4.0 U*
					UG-MW18-181002	10/02/2018	34.44	169.51	10/18/2018	**6.4**	**500**	4.0 U	4.0 U	*4.0 U*	*4.0 U*	4.0 U	4.0 U	4.0 U	20 U	*4.0 U*
UG-MW19	Downgradient	On Campus	Deep	191.75	UG-MW19-051409	05/14/2009	24.56	167.19	5/15/2009	**9.73**	**502**	**1.21**	0.100 U	**0.770**	0.0200 U	**3.56**	**0.260**	0.200 U	1.00 U	**0.200**
					UG-MW19DUP-051409	05/14/2009	24.56	167.19	5/15/2009	**9.63**	**495**	**1.22**	0.100 U	**0.800**	0.0200 U	**3.62**	**0.260**	0.200 U	1.00 U	**0.200**
					UG-MW19-130614	06/14/2013	24.73	166.69	11/8/2013	**5.6**	**300**	2.0 U	2.0 U	2.0 U	*1.0 U*	2.0 U	2.0 U	2.0 U	10 U	*2.0 U*
					UG-MW19-161205	12/05/2016	24.48	167.27	12/27/2016	**3.1**	**220**	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
					UG-MW19-181002	10/02/2018	25.73	166.02	10/18/2018	**3.5**	**210**	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
UG-MW21	Downgradient	On Campus	Deep	196.31	UG-MW21-051409	05/14/2009	24.68	171.63	5/15/2009	0.0500 U	**12.8**	0.0500 U	0.100 U	0.0500 U	0.0200 U	0.200 U	0.200 U	0.200 U	1.00 U	0.200 U
					UG-MW21-130618	06/18/2013	24.68	171.11	11/8/2013	0.20 U	**7.7**	0.20 U	0.20 U	0.20 U	0.10 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW21-161205	12/05/2016	24.21	172.1	12/27/2016	0.20 U	**6.9**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW21-181005	10/05/2018	26.03	170.28	10/18/2018	0.20 U	**7.5**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
UG-MW24	Downgradient	On Campus	Deep	196.8	UG-MW24-130715	07/15/2013	30.88	165.47	11/8/2013	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.10 U	0.20 U	0.20 U	0.29 U	1.0 U	0.20 U
					UG-MW24-161205	12/05/2016	31.46	165.34	12/27/2016	0.20 U	**0.31**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW24-181003	10/03/2018	31.98	164.82	10/18/2018	0.20 U	**0.53**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
UG-MW25D	Downgradient	On Campus	Deep	202.05	UG-MW25D-130904	09/04/2013	36.73	165.32	11/8/2013	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW25D-161212	12/12/2016	36.84	165.21	12/27/2016	0.20 U	**1.4**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					DUP-161212	12/12/2016	36.84	165.21	12/27/2016	0.20 U	**1.3**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
					UG-MW25D-181003	10/03/2018	37.17	164.88	10/18/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	0.20 U
UG-MW38D	Downgradient	On Campus	Deep	192.47	UG-MW38D-131003	10/02/2013	26.11	166.36	11/8/2013	**6.7**	**160**	**1.9**	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
					UG-MW38D-161205	12/05/2016	25.72	166.75	12/27/2016	**3.0**	**110**	**2.3**	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
					UG-MW38D-181002	10/02/2018	26.51	165.96	10/18/2018	1.0 U	**160**	**4.3**	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U

Notes:

[1] Chemical analysis performed by OnSite Environmental, Inc., of Redmond, Washington.

[2] Remedial Investigation Groundwater Screening Level per the 2106 RI Work Plan.

[3] Sample ID = Area number - Monitoring well - Date (year, month, day) (i.e., A11-MW10D-161212).

[4] Surveyed elevations taken from AHBL 2018, 2016 and 2014 Survey, National Geodetic Vertical Datum 1929 (NGVD 29) vertical datum and URS 2007 Upgradient TCE Assessment, NGVD 29 vertical datum.

[5] Volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) method 8260B. Other VOCs were analyzed but not detected and not current chemicals of concern.

Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.

Bold font type and gray shading indicates that the detected concentration is greater than the respective RIGSL cleanup level.

U = Analyte was not detected at or greater than the listed reporting limit.

Italics = The listed reporting limit is greater than the applicable cleanup level.

-- = Sample not analyzed

MTCA = Model Toxics Control Act

VOCs = Volatile organic compounds

Table 2

Summary of Volatile Organic Compounds (VOCs) For Wells Completed in 2016 and 2018 - Soil[1]

Potential Upgradient Sources Along Tacoma Avenue South

University of Washington - Tacoma, Washington

Location Identification	Location Relative to Potential Sources #3 to #7	Sample Identification[3]	Sample Date	Start Depth (feet bgs)	End Depth (feet bgs)	VOCs (mg/kg)[4]							
						PCE, TCE and Associated Breakdown Products						1,1,1-TCA Breakdown Products (Not Including TCE)	
						Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1-Dichloroethene (DCE)	cis-1,2-DCE	Trans-1,2-DDCEe	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane
Remedial Investigation Soil Screening Levels (Vadose Zone) (mg/kg)[2]						0.054	0.001	0.023	0.08	0.54	0.0018	1.6	0.042
Remedial Investigation Soil Screening Levels (Saturated) (mg/kg)[2]						0.0027	0.0001	0.0011	0.004	0.027	0.001	0.08	0.0021
A6-MW3D	Crossgradient	A6-MW3D-4-5	08/30/2018	4	5	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A6-MW3D-9-10	08/30/2018	9	10	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A6-MW3D-19-20	08/30/2018	19	20	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A6-MW3D-23-24	08/30/2018	23	24	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U
		A6-MW3D-27-28	08/30/2018	27	28	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A6-MW3D-35-36	08/30/2018	35	36	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U
		A6-MW3D-36.5-37.5	08/30/2018	36.5	37.5	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A6-MW3D-39-40	08/30/2018	39	40	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A6-MW3D-44-45	08/30/2018	44	45	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
		A6-MW3D-49-50	08/30/2018	49	50	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U
		A6-MW3D-54-55	08/30/2018	54	55	0.0010 U	**0.0032**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A6-MW3D-57-58	08/30/2018	57	58	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A6-MW3D-64-65	08/31/2018	64	65	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		DUP-1-20180831	08/31/2018	64	65	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U
		A6-MW3D-69-70	08/31/2018	69	70	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U
		A6-MW3D-74-75	08/31/2018	74	75	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		DUP-2-20180831	08/31/2018	74	75	0.00075 U	**0.00086**	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U
A11-MW1D	Downgradient	A11-MW1D-5.5-6	08/10/2016	5.5	6	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW1D-9-10	08/10/2016	9	10	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U
		A11-MW1D-17-17.5	08/10/2016	17	17.5	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
		A11-MW1D-17.5-18	08/10/2016	17.5	18	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW1D-20-21	08/10/2016	20	21	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U
		DUP1-20160810	08/10/2016	20	21	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U
		A11-MW1D-29-30	08/10/2016	29	30	0.00098 U	**0.0051**	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW1D-38-39	08/10/2016	38	39	0.00084 U	**0.00089**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U
		A11-MW1D-44-45	08/10/2016	44	45	0.00094 U	**0.003**	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U
		A11-MW1D-49-50	08/10/2016	49	50	0.00073 U	**0.027**	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U
A11-MW1S	Downgradient	A11-MW1S-1-2	08/11/2016	1	2	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		DUP1-20160811	08/11/2016	1	2	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW1S-9-10	08/11/2016	9	10	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U
		A11-MW1S-16-16.5	08/11/2016	16	16.5	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
		A11-MW1S-16.5-17	08/11/2016	16.5	17	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
A11-MW7D	Downgradient	A11-MW7D-5-5.5	08/11/2016	5	5.5	0.00074 U	**0.052**	0.00074 U	0.00074 U	0.00074 U	0.00074 U	**0.0018**	0.00074 U
		A11-MW7D-14-15	08/11/2016	14	15	0.00078 U	**0.062**	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U
		A11-MW7D-18-18.5	08/11/2016	18	18.5	0.00085 U	**0.0061**	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW7D-18.5-19	08/11/2016	18.5	19	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
		A11-MW7D-21-22	08/12/2016	21	22	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A11-MW7D-24-25	08/12/2016	24	25	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U
		A11-MW7D-34-34.5	08/12/2016	34	34.5	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U
		A11-MW7D-34.5-35	08/12/2016	34.5	35	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW7D-42-43	08/12/2016	42	43	0.00090 U	**0.023**	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U
		A11-MW7D-53-54	08/12/2016	53	54	0.00099 U	**0.0035**	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U
		A11-MW7D-59-60	08/12/2016	59	60	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U
		A11-MW7D-63-64	08/12/2016	63	64	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
		A11-MW7D-66-67	08/12/2016	66	67	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
A11-MW7S	Downgradient	A11-MW7S-4-5	08/15/2016	4	5	0.00077 U	**0.0079**	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U
		A11-MW7S-9-10	08/15/2016	9	10	0.00070 U	**0.032**	0.00070 U	0.00070 U	0.00070 U	0.00070 U	0.00070 U	0.00070 U
		A11-MW7S-15-16	08/15/2016	15	16	0.00071 U	**0.043**	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
A11-MW13D	Crossgradient	A11-MW13D-2-3	08/22/2018	2	3	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U	0.00044 U
		A11-MW13D-6-7	08/22/2018	6	7	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U
		A11-MW13D-9-10	08/22/2018	9	10	0.00093 U	**0.0019**	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A11-MW13D-13-14	08/22/2018	13	14	0.00089 U	**0.0011**	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U
		A11-MW13D-17-18	08/22/2018	17	18	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW13D-18-19	08/22/2018	18	19	0.00091 U	**0.00097**	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U
		A11-MW13D-19.5-20.0	08/22/2018	19.5	20	0.0012 U	*0.0012 U*	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW13D-20-21	08/22/2018	20	21	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW13D-24-25	08/22/2018	24	25	0.0012 U	**0.0017**	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW13D-26-27	08/22/2018	26	27	0.0010 U	**0.0063**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW13D-28-29	08/22/2018	28	29	0.0011 U	**0.048**	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW13D-32-33	08/22/2018	32	33	0.0013 U	**0.16**	*0.0013 U*	**0.0014**	0.0013 U	*0.0013 U*	0.0013 U	0.0013 U
		A11-MW13D-33-34	08/22/2018	33	34	0.00096 U	**0.0063**	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U
		A11-MW13D-36-37	08/22/2018	36	37	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW13D-39-40	08/22/2018	39	40	0.00088 U	**0.0043**	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW13D-44-45	08/22/2018	44	45	0.00079 U	**0.014**	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U
		A11-MW13D-49-50	08/22/2018	49	50	0.00093 U	**0.0089**	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A11-MW13D-54-55	08/22/2018	54	55	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U
		A11-MW13D-59-60	08/22/2018	59	60	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW13D-64-65	08/22/2018	64	65	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A11-MW13D-68-69	08/22/2018	68	69	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A11-MW13D-69-70	08/22/2018	69	70	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U

Location Identification	Location Relative to Potential Sources #3 to #7	Sample Identification[3]	Sample Date	Start Depth (feet bgs)	End Depth (feet bgs)	VOCs (mg/kg)[4]							
						PCE, TCE and Associated Breakdown Products						1,1,1-TCA Breakdown Products (Not Including TCE)	
						Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1-Dichloroethene (DCE)	cis-1,2-DCE	Trans-1,2-DDCEe	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane
Remedial Investigation Soil Screening Levels (Vadose Zone) (mg/kg)[2]						0.054	0.001	0.023	0.08	0.54	0.0018	1.6	0.042
Remedial Investigation Soil Screening Levels (Saturated) (mg/kg)[2]						0.0027	0.0001	0.0011	0.004	0.027	0.001	0.08	0.0021
A11-MW13S	Crossgradient	A11-MW13S-1-2	08/23/2018	1	2	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		DUP-1-20180823	08/23/2018	1	2	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW13S-9-10	08/23/2018	9	10	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW13S-15.5-16.5	08/23/2018	15.5	16.5	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW13S-17-18	08/23/2018	17	18	0.00084 U	**0.0021**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U
		DUP-2-20180823	08/23/2018	17	18	0.0018 U	*0.0018 U*	*0.0018 U*	0.0018 U	0.0018 U	*0.0018 U*	0.0018 U	0.0018 U
		A11-MW13S-19.5-20	08/23/2018	19.5	20	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
A11-MW14D	Downgradient	A11-MW14D-6-7	09/11/2018	6	7	0.00099 U	**0.0023**	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U
		A11-MW14D-14-15	09/11/2018	14	15	0.00086 U	**0.0076**	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
		A11-MW14D-19-20	09/11/2018	19	20	**0.0026**	**0.025**	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW14D-23-24	09/11/2018	23	24	**0.0076**	**0.077**	*0.0013 U*	0.0013 U	0.0013 U	*0.0013 U*	0.0013 U	0.0013 U
		A11-MW14D-31-32	09/12/2018	31	32	**0.0026**	**0.016**	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U
		A11-MW14D-37-38	09/12/2018	37	38	**0.0016**	**0.098**	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW14D-39.5-40	09/12/2018	39.5	40	0.00094 U	**0.016**	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U
		A11-MW14D-42-42.5	09/12/2018	42	42.5	0.0010 U	**0.0032**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW14D-45-46	09/12/2018	45	46	0.0012 U	**0.0067**	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		DUP-1-20180912	09/12/2018	45	46	0.00095 U	**0.0048**	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U
		A11-MW14D-59-60	09/12/2018	59	60	0.00089 U	**0.0092**	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U
		A11-MW14D-65-66	09/12/2018	65	66	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U
		A11-MW14D-69-70	09/12/2018	69	70	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		DUP-2-20180912	09/12/2018	69	70	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U
A11-MW14S	Downgradient	A11-MW14S-5-6	09/13/2018	5	6	0.00078 U	**0.0018**	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U
		A11-MW14S-19-20	09/13/2018	19	20	**0.0018**	**0.015**	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
		A11-MW14S-15-16	09/13/2018	15	16	0.00087 U	**0.029**	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U
		A11-MW14S-22-23	09/13/2018	22	23	0.00085 U	**0.0029**	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW14S-24-25	09/13/2018	24	25	**0.0012**	**0.0099**	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
A11-MW15D	Downgradient	A11-MW15D-4-5	08/27/2018	4	5	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW15D-14-15	08/27/2018	14	15	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U
		DUP-1-20180827	08/27/2018	14	15	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW15D-24-25	08/27/2018	24	25	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW15D-25-26	08/27/2018	25	26	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW15D-29-30	08/27/2018	29	30	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
		A11-MW15D-34-34.6	08/27/2018	34	34.6	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW15D-39-40	08/27/2018	39	40	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW15D-41-42	08/27/2018	41	42	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U
		A11-MW15D-43-44	08/27/2018	43	44	0.0019 U	*0.0019 U*	*0.0019 U*	0.0019 U	0.0019 U	*0.0019 U*	0.0019 U	0.0019 U
		A11-MW15D-53-54	08/27/2018	53	54	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW15D-63-64	08/27/2018	63	64	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW15D-65-66	08/27/2018	65	66	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW15D-69-70	08/27/2018	69	70	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW15D-76-77	08/27/2018	76	77	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
		A11-MW15D-80-81	08/27/2018	80	81	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW15D-89-90	08/27/2018	89	90	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
A11-MW15S	Downgradient	A11-MW15S-1-2	08/28/2018	1	2	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		DUP-1-20180828	08/28/2018	1	2	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
		A11-MW15S-11-12	08/28/2018	11	12	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A11-MW15S-22-22.5	08/28/2018	22	22.5	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U
		A11-MW15S-29-30	08/28/2018	29	30	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U
		A11-MW15S-35-36	08/28/2018	35	36	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U
		A11-MW15S-41-42	08/28/2018	41	42	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW15S-44-45	08/28/2018	44	45	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
A11-MW16D	Upgradient	A11-MW16D-9-10	09/27/2018	9	10	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW16D-19-20	09/27/2018	19	20	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW16D-29-30	09/27/2018	29	30	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW16D-39-40	09/27/2018	39	40	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW16D-45-46	09/27/2018	45	46	0.0012 U	*0.0012 U*	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW16D-49-50	09/27/2018	49	50	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW16D-57-58	09/27/2018	57	58	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
		A11-MW16D-58-58.5	09/27/2018	58	58.5	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW16D-59-60	09/27/2018	59	60	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW16D-64-65	09/27/2018	64	65	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U
		DUPE-1-20180927	09/27/2018	64	65	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW16D-66-67	09/27/2018	66	67	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U
		A11-MW16D-69-70	09/27/2018	69	70	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW16D-75-76	09/27/2018	75	76	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW16D-79-80	09/27/2018	79	80	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U

Location Identification	Location Relative to Potential Sources #3 to #7	Sample Identification[3]	Sample Date	Start Depth (feet bgs)	End Depth (feet bgs)	VOCs (mg/kg)[4]							
						PCE, TCE and Associated Breakdown Products						1,1,1-TCA Breakdown Products (Not Including TCE)	
						Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1-Dichloroethene (DCE)	cis-1,2-DCE	Trans-1,2-DDCEe	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane
Remedial Investigation Soil Screening Levels (Vadose Zone) (mg/kg)[2]						0.054	0.001	0.023	0.08	0.54	0.0018	1.6	0.042
Remedial Investigation Soil Screening Levels (Saturated) (mg/kg)[2]						0.0027	0.0001	0.0011	0.004	0.027	0.001	0.08	0.0021
A11-MW17D	Upgradient	A11-MW17D-9-10	09/28/2018	9	10	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW17D-19-20	09/28/2018	19	20	0.0012 U	*0.0012 U*	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW17D-24-25	09/28/2018	24	25	0.0014 U	*0.0014 U*	*0.0014 U*	0.0014 U	0.0014 U	*0.0014 U*	0.0014 U	0.0014 U
		A11-MW17D-29-30	09/28/2018	29	30	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U
		A11-MW17D-39-40	10/01/2018	39	40	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW17D-49-50	10/01/2018	49	50	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U
		A11-MW17D-55-56	10/01/2018	55	56	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW17D-59-60	10/01/2018	59	60	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U
		A11-MW17D-65-66	10/01/2018	65	66	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U
		A11-MW17D-69-70	10/01/2018	69	70	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U
		A11-MW17D-75-76	10/01/2018	75	76	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW17D-85-86	10/01/2018	85	86	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A11-MW17D-95-96	10/01/2018	95	96	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW17D-99-100	10/01/2018	99	100	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U
		A11-MW17D-104-105	10/01/2018	104	105	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
A11-MW18D	Upgradient	A11-MW18D-9-10	10/03/2018	9	10	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U
		A11-MW18D-19-20	10/03/2018	19	20	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW18D-25-26	10/03/2018	25	26	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U
		A11-MW18D-29-30	10/03/2018	29	30	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW18D-39-40	10/03/2018	39	40	0.0012 U	*0.0012 U*	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW18D-44-45	10/03/2018	44	45	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A11-MW18D-49-50	10/03/2018	49	50	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U
		DUP-1-20181003	10/03/2018	49	50	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U
		A11-MW18D-55-56	10/03/2018	55	56	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
		A11-MW18D-59-60	10/03/2018	59	60	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U
		A11-MW18D-65-66	10/03/2018	65	66	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U
		A11-MW18D-69-70	10/03/2018	69	70	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U
		A11-MW18D-75-76	10/03/2018	75	76	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW18D-79-80	10/03/2018	79	80	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U
A11-MW20D	Upgradient	A11-MW20D-4-5	08/29/2018	4	5	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW20D-10-11	08/29/2018	10	11	0.0013 U	*0.0013 U*	*0.0013 U*	0.0013 U	0.0013 U	*0.0013 U*	0.0013 U	0.0013 U
		A11-MW20D-12.5-13	08/29/2018	12.5	13	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW20D-18-19	08/29/2018	18	19	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW20D-19-20	08/29/2018	19	20	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20D-20-21	08/29/2018	20	21	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW20D-26-27	08/29/2018	26	27	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20D-31-32	08/29/2018	31	32	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U
		A11-MW20D-39-40	08/29/2018	39	40	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
		A11-MW20D-41-42	08/29/2018	41	42	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20D-43-44	08/29/2018	43	44	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20D-49-50	08/29/2018	49	50	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U
A11-MW20D	Upgradient	A11-MW20D-55-56	08/29/2018	55	56	0.0012 U	*0.0012 U*	*0.0012 U*	0.0012 U	0.0012 U	*0.0012 U*	0.0012 U	0.0012 U
		A11-MW20D-59-60	08/29/2018	59	60	0.0011 U	**0.0051**	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20D-62-63	08/29/2018	62	63	0.00097 U	**0.0050**	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A11-MW20D-65-66	08/29/2018	65	66	0.00098 U	**0.0046**	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U
		A11-MW20D-69-70	08/29/2018	69	70	0.00084 U	**0.0013**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U
		A11-MW20D-74-75	08/29/2018	74	75	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
		A11-MW20D-75-76	08/29/2018	75	76	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U
		DUP-1-20180829	08/29/2018	75	76	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A11-MW20D-84-85	08/29/2018	84	85	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U
A11-MW20S	Upgradient	A11-MW20S-5-6	09/10/2018	5	6	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
		A11-MW20S-15-16	09/10/2018	15	16	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20S-22-23	09/10/2018	22	23	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
		A11-MW20S-31-32	09/10/2018	31	32	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW20S-39-40	09/10/2018	39	40	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00068 U	0.00068 U
		DUP-1-20180910	09/10/2018	39	40	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U
		A11-MW20S-44-45	09/10/2018	44	45	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
A11-MW31D	Crossgradient	A11-MW31D-7-8	08/23/2018	7	8	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U
		A11-MW31D-19-20	08/23/2018	19	20	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		DUP-3-20180823	08/23/2018	19	20	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U
		A11-MW31D-29-30	08/23/2018	29	30	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U
		A11-MW-31D-39-40	08/23/2018	39	40	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		A11-MW31D-50-51	08/24/2018	50	51	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U	0.0011 U	*0.0011 U*	0.0011 U	0.0011 U
		A11-MW31D-62-63	08/24/2018	62	63	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U
		A11-MW31D-67-68	08/24/2018	67	68	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U
		A11-MW31D-71-72	08/24/2018	71	72	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U
		A11-MW31D-76-77	08/24/2018	76	77	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
		DUP-2-20180824	08/24/2018	76	77	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U
		A11-MW31D-79-80	08/24/2018	79	80	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U

Notes:

[1] Chemical analysis performed by OnSite Environmental, Inc., of Redmond, Washington.

[2] Remedial Investigation Soil Screening Level per the 2106 RI Work Plan.

[3] Sample ID = Area number - Monitoring well - Depth interval (feet bgs) (i.e., A6-MW3D-4-5).

[4] HVOCs were analyzed by United States EPA method 8260B. Other VOCs were analyzed but not detected.

U = Analyte was not detected at or greater than the listed reporting limit.

Italics = The listed reporting limit is greater than the applicable cleanup level.

Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.

Bold font type and gray shading indicates that the detected concentration is greater than the respective RIGSL cleanup level.

mg/Kg = milligram per kilogram

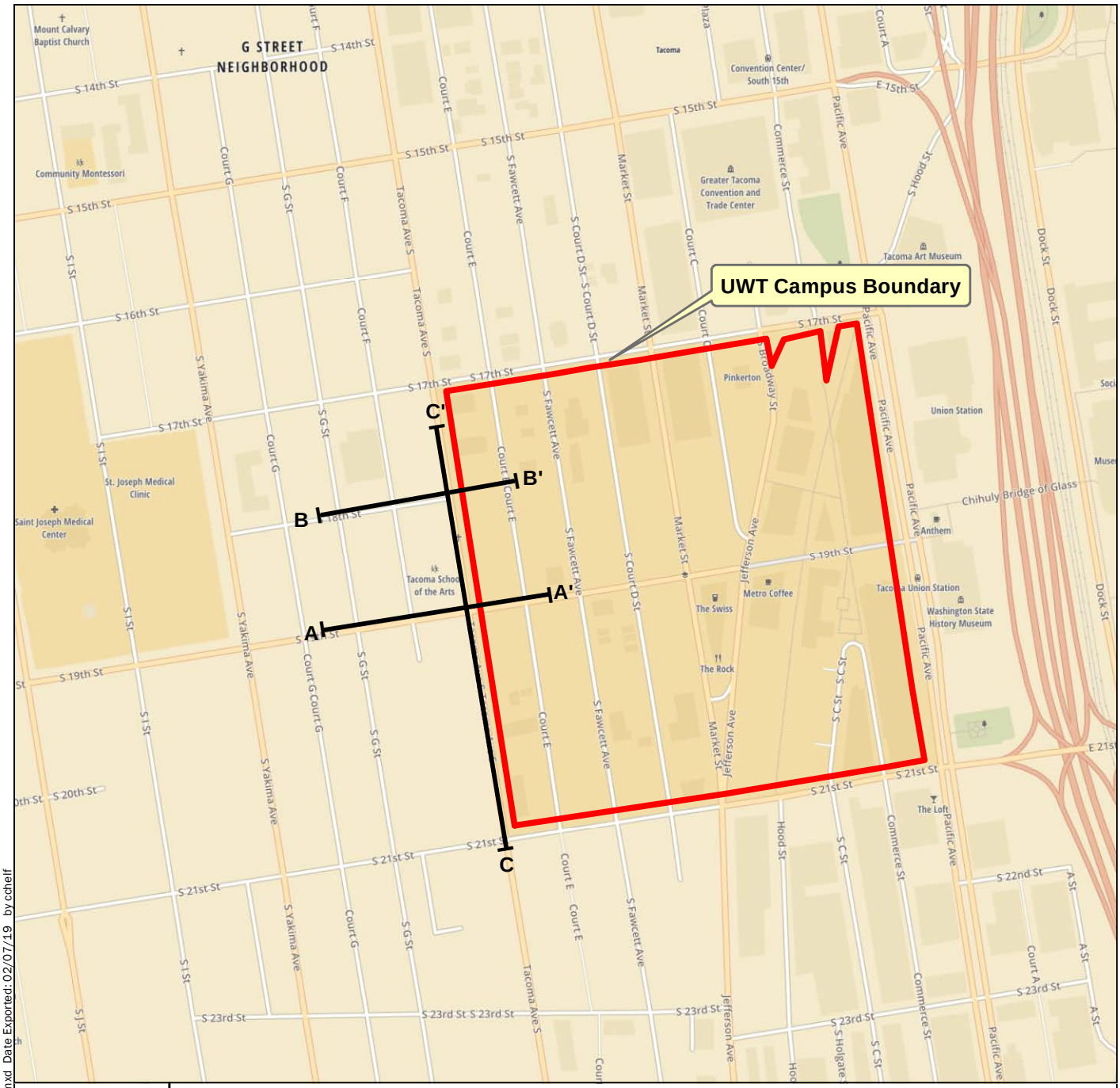
bgs = Below ground surface

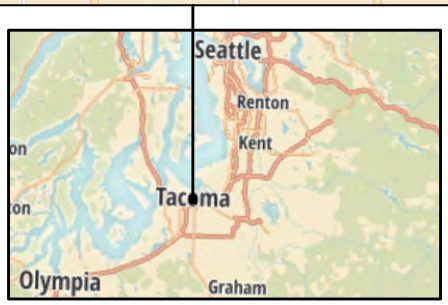
EPA = United States Environmental Protection Agency

Ecology = Washington State Department of Ecology

RI = Remedial Investigation

HVOCs = Halogenated volatile organic compounds





N
W E
S

500 0 500

Feet

Notes:

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Data Source: Mapbox Open Street Map, 2015

Projection: NAD 1983 UTM Zone 10N

Vicinity Map

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington – Tacoma
Tacoma, Washington

GeoEngineers

Figure 1

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Legend

- UWT Master Plan Campus Boundary
- Shallow Aquifer Monitoring Well
- Deep Aquifer Monitoring Well
- Manhole Where Sampling Was Completed
- Sanitary Sewer Manhole
- Sample Not Collected in 2018 Because Well or Manhole Was Dry
- Potential Source Property
- Storm Drain Utility
- Sewer Utility

80 0 80

Feet

Notes:

RIGSL = Remedial Investigation Groundwater Screening Level
TCE = Tricloroethene — **RIGSL:**
PCE = Tetrachloroethene — TCE = 1.6 µg/L
µg/L = microgram per Liter — PCE = 5 µg/L
RIGSL = Remedial Investigation Groundwater Screening Level

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Data Source: Aerial from ESRI 2016

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

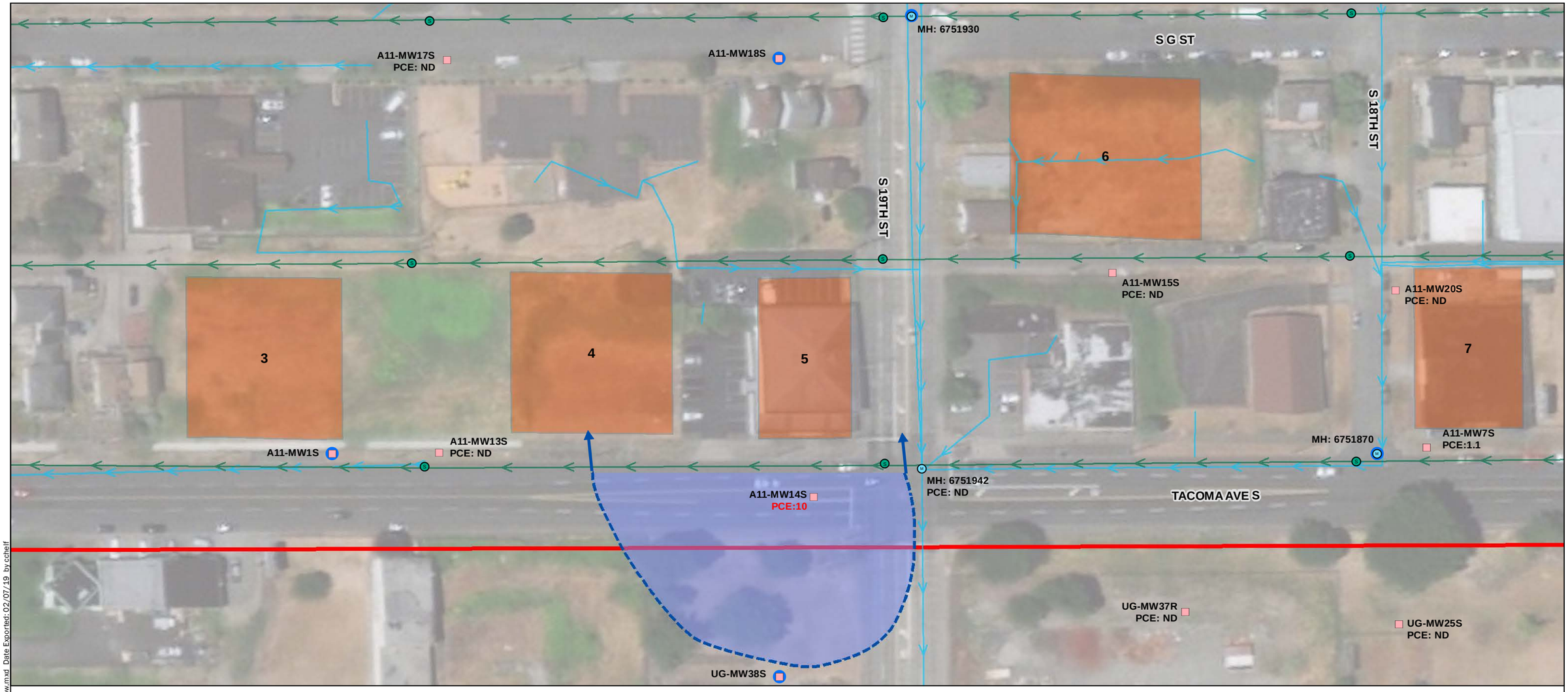
Overall Site Plan

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington – Tacoma
Tacoma, Washington

GeoEngineers

Figure 2

P:\0\0183109\GIS\MXDs\PotentialSourcesMemo\0183109902_F2_AOC11_AllPlumes.mxd Date Exported: 02/07/19 by cchelf



Legend

- UWT Master Plan Campus Boundary
- Shallow Aquifer Monitoring Well
- Manhole Where Sampling Was Completed
- Sanitary Sewer Manhole
- Sample Not Collected in 2018 Because Well or Manhole Was Dry
- Potential Source Property
- Approximate Lateral Extent of PCE Groundwater Plume in Shallow Aquifer
- Storm Drain Utility
- Sewer Utility

PCE: ND/# Detected chemical concentration (µg/L) in groundwater collected from respective well in September/October 2018. ND indicates chemical was not detected at a concentration greater than laboratory report limit. If text is shown in red, then chemical was detected at a concentration greater than the RIGSL

80 0 80
Feet

Notes:

RIGSL = Remedial Investigation Groundwater Screening Level
PCE = tetrachloroethene
ND = Not Detected
µg/L = microgram per Liter
RIGSL = Remedial Investigation Groundwater Screening Level

RIGSL:
PCE = 5 µg/L

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Data Source: Aerial from ESRI 2016

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Shallow Aquifer - PCE

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington – Tacoma
Tacoma, Washington

GeoEngineers

Figure 3

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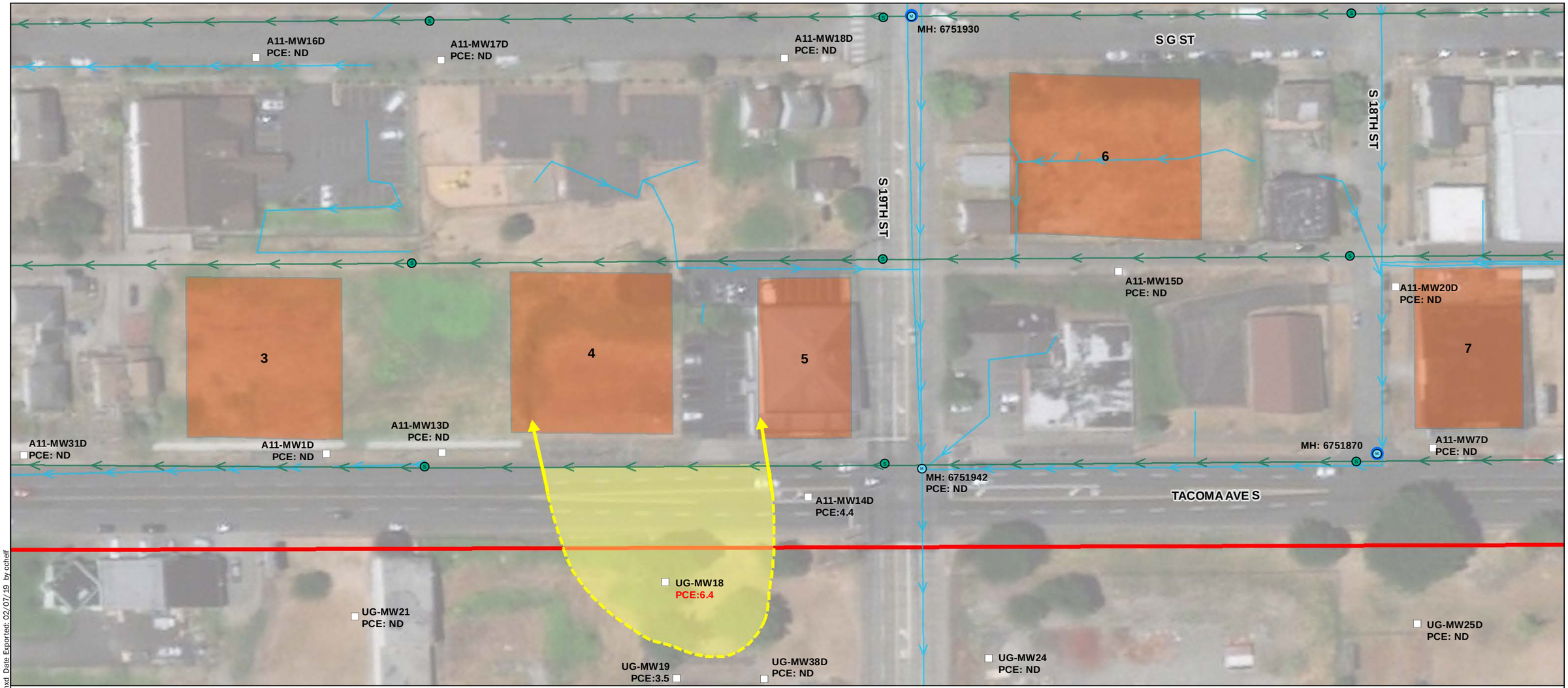

Legend

- UWT Master Plan Campus Boundary
- Deep Aquifer Monitoring Well
- Manhole Where Sampling Was Completed
- Sanitary Sewer Manhole
- Sample Not Collected in 2018 Because Well or Manhole Was Dry
- Potential Source Property
- Approximate Lateral Extent of PCE in Deep Aquifer
- Storm Drain Utility
- Sewer Utility

PCE: ND/# Detected chemical concentration (µg/L) in groundwater collected from respective well in September/October 2018. ND indicates chemical was not detected at a concentration greater than laboratory report limit. If text is shown in red, then chemical was detected at a concentration greater than the RIGSL

W S N E

80 0 80

Feet

Notes:

RIGSL = Remedial Investigation Groundwater Screening Level
PCE = tetrachloroethene
ND = Not Detected
µg/L = microgram per Liter

RIGSL:
PCE = 5 µg/L

RIGSL = Remedial Investigation Groundwater Screening Level

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Data Source: Aerial from ESRI 2016

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Deep Aquifer - PCE

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington – Tacoma
Tacoma, Washington

GeoEngineers

Figure 4

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Legend

- UWT Master Plan Campus Boundary
- Shallow Aquifer Monitoring Well
- Manhole Where Sampling Was Completed
- Sanitary Sewer Manhole
- Sample Not Collected in 2018 Because Well or Manhole Was Dry
- Potential Source Property
- Approximate Lateral Extent of TCE Groundwater Plume in Shallow Aquifer
- Storm Drain Utility
- Sewer Utility

TCE: ND/# Detected chemical concentration (µg/L) in groundwater collected from respective well in September/October 2018. ND indicates chemical was not detected at a concentration greater than laboratory report limit. If text is shown in red, then chemical was detected at a concentration greater than the RIGSL

W N S E

80 0 80

Feet

Notes:

RIGSL = Remedial Investigation Groundwater Screening Level
TCE = Tricloroethene
ND = Not Detected
µg/L = microgram per Liter

RIGSL:
TCE = 1.6 µg/L

RIGSL = Remedial Investigation Groundwater Screening Level

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Data Source: Aerial from ESRI 2016

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Shallow Aquifer - TCE

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington – Tacoma
Tacoma, Washington

GeoEngineers

Figure 5

P:\0183109\GIS\MXDs\PotentialSourcesMemo\0183109002_F5_AOC11_TCEShallow.mxd Date Exported: 02/07/19 by cchelf

Legend

- UWT Master Plan Campus Boundary
- Deep Aquifer Monitoring Well
- Manhole Where Sampling Was Completed
- Sanitary Sewer Manhole
- Sample Not Collected in 2018 Because Well or Manhole Was Dry
- Potential Source Property
- Approximate Lateral Extent of TCE in Deep Aquifer
- Storm Drain Utility
- Sewer Utility

TCE: ND/# Detected chemical concentration (µg/L) in groundwater collected from respective well in September/October 2018. ND indicates chemical was not detected at a concentration greater than laboratory report limit. If text is shown in red, then chemical was detected at a concentration greater than the RIGSL

W S N E

80 0 80

Feet

Notes:

RIGSL = Remedial Investigation Groundwater Screening Level
TCE = Tricloroethene
ND = Not Detected
µg/L = microgram per Liter

RIGSL:
TCE = 1.6 µg/L

RIGSL = Remedial Investigation Groundwater Screening Level

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Data Source: Aerial from ESRI 2016

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

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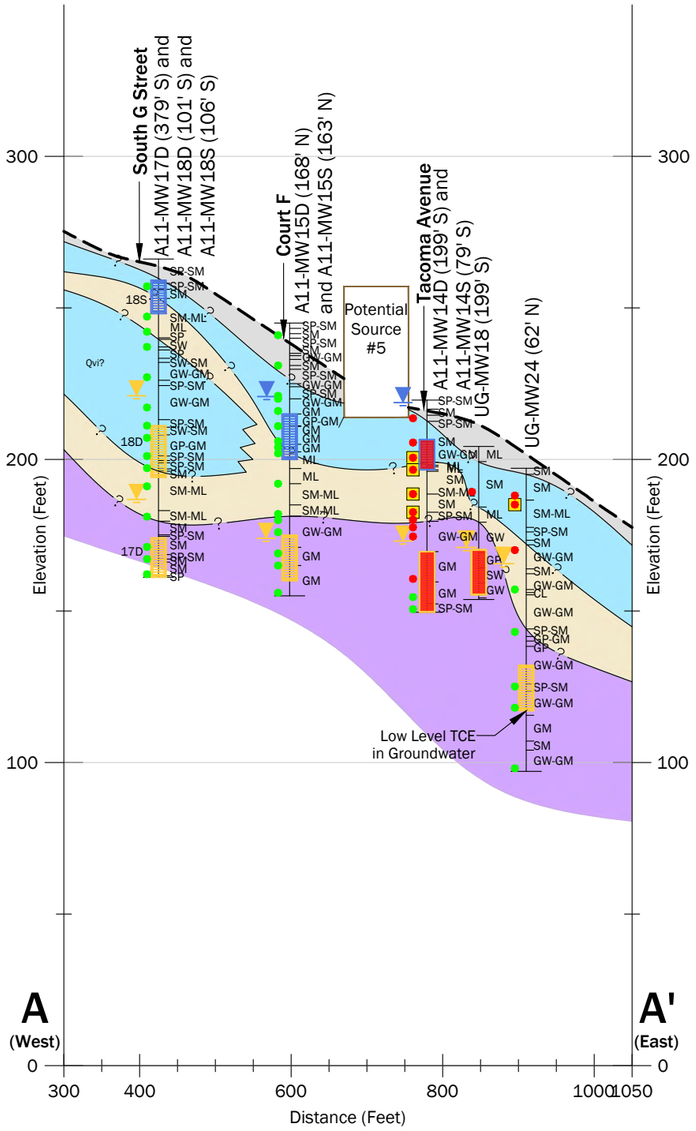
Deep Aquifer - TCE

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington – Tacoma
Tacoma, Washington

GeoEngineers

Figure 6



Legend

- Existing Ground Surface
- Fill
- Ice-Contact Deposits (Qvi)
- Silt Layer/ Transition Zone (Semi-Confining to Confining)
- Advance Outwash
- bgs — Below Ground Surface

UG-MW24 (62' N) — Borehole Number (Offset Distance and Direction)

SM — Borehole Lithology

Shallow Aquifer Water Level

Deep Aquifer Water Level

Shallow Well Screen

Deep Well Screen

? — Inferred Soil Contact Line

Groundwater Chemical Analytical Results

Red well screen indicates TCE was detected at a concentration greater than the RIGSL in 2018

Soil Chemical Analytical Results

- TCE detected in the analyzed soil sample
- TCE not detected in the analyzed soil sample
- PCE detected in the analyzed soil sample. If not shown, then PCE was not detected

Notes:

Qvi = Ice-Contact Deposits
TCE = Trichloroethene
PCE = Tetrachloroethene
RIGSL = Remedial investigation groundwater screening levels

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3. Horizontal datum - NAD 83/91 Washington State Plane - South Zone (City of Tacoma Horizontal control Holding City Monument Numbers 411 and 414). Vertical datum NGVD 29 (brass monument at South 19th and Fawcett Avenue, elevation 165.15).
4. Ground surface elevation based on LiDAR obtained from the Puget Sound LiDAR consortium. The surface topography in the areas of existing buildings was adjusted as necessary. Well elevations for the wells installed in 2013 were based on a survey completed by AHBL November 6, 2013. Well elevations for wells installed prior to 2013 are based on the elevations reported in the previous reports.
5. Storm sewer and sanitary sewer elevations and locations are estimated from manhole and pipe elevations obtained from City of Tacoma govme.com.
6. Lithology shown on borings completed by GeoEngineers. Refer to boring logs for lithologic symbol descriptions provided in Appendix D.

200 0 200
Horizontal Scale in Feet

50 0 50
Vertical Scale in Feet
Vertical Exaggeration: 4X

Cross Section A-A'
Along South 19th Street

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington - Tacoma
Tacoma, Washington

GeoEngineers

Figure 7

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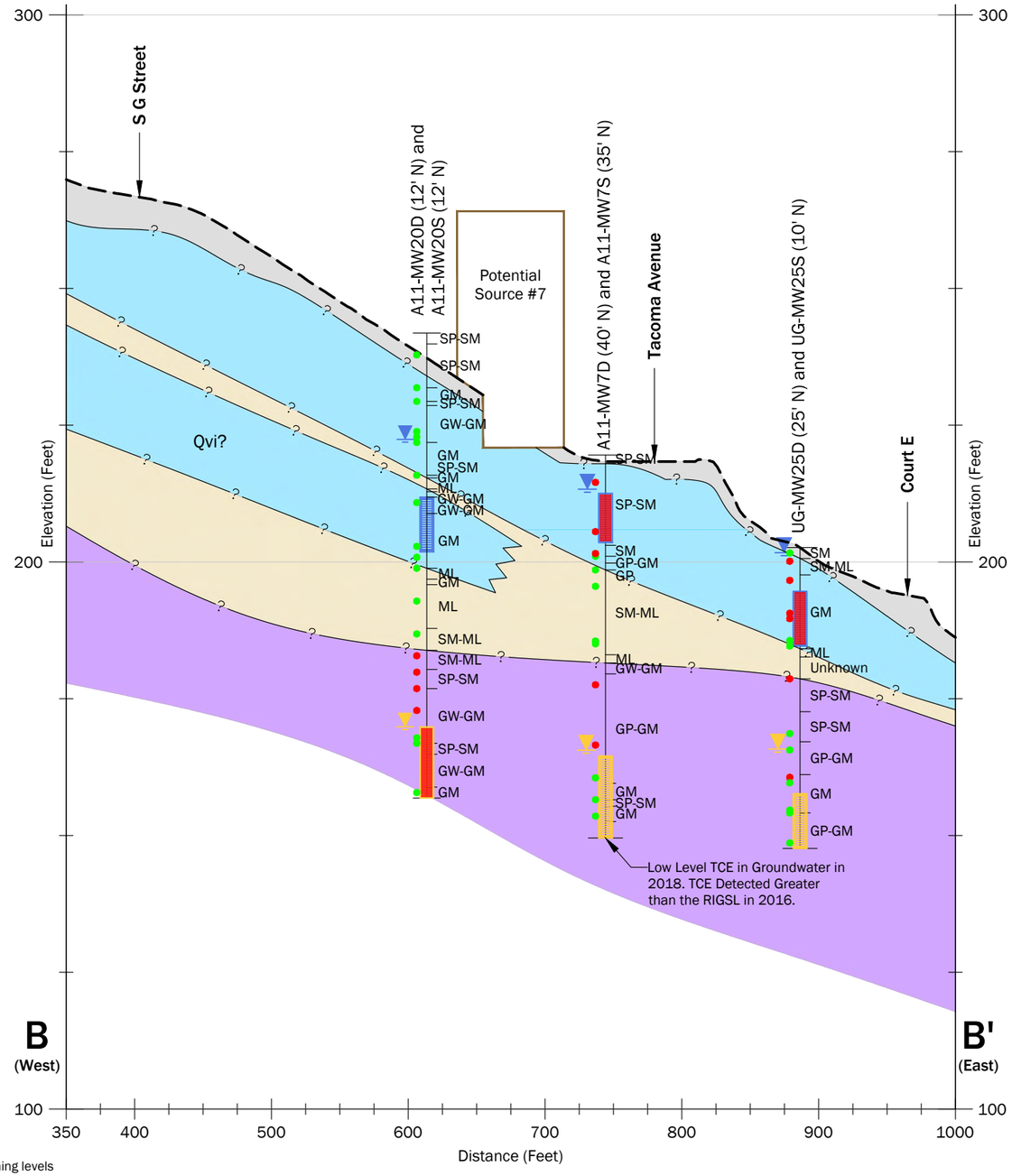

Legend

- Existing Ground Surface
- Fill
- Ice-Contact Deposits (Qvi)
- Silt Layer/ Transition Zone (Semi-Confining to Confining)
- Advance Outwash
- bgs — Below Ground Surface

UG-MW25 (25' N) — Borehole Number (Offset Distance and Direction)

SM — Borehole Lithology

- Shallow Aquifer Water Level
- Deep Aquifer Water Level
- Shallow Well Screen
- Deep Well Screen
- ? — Inferred Soil Contact Line

Groundwater Chemical Analytical Results

- Red well screen indicates TCE was detected at a concentration greater than the RIGSL in 2018

Soil Chemical Analytical Results

- TCE detected in the analyzed soil sample
- TCE not detected in the analyzed soil sample
- PCE detected in the analyzed soil sample. If not shown, then PCE was not detected

Notes:
Qvi = Ice-Contact Deposits
TCE = Trichloroethene
PCE = Tetrachloroethene
RIGSL = Remedial investigation groundwater screening levels

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6. Lithology shown on borings completed by GeoEngineers. Refer to boring logs for lithologic symbol descriptions provided in Appendix D.

100 0 100
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 4X

Cross Section B-B'
Along South 18th Street

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington - Tacoma
Tacoma, Washington

GeoEngineers

Figure 8

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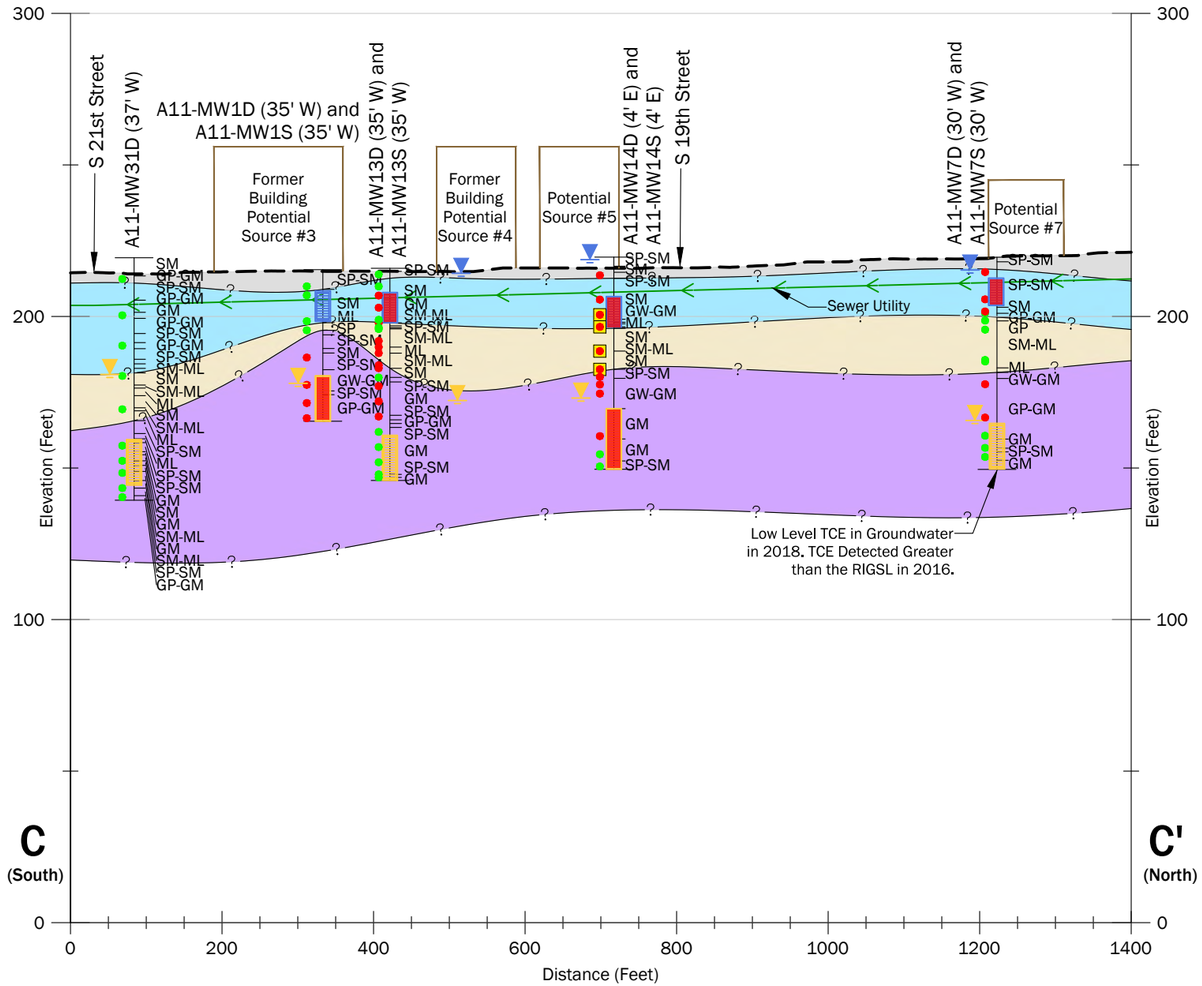

Legend

- Existing Ground Surface
- Fill
- Ice-Contact Deposits (Qvi)
- Silt Layer/ Transition Zone (Semi-Confining to Confining)
- Advance Outwash
- bgs — Below Ground Surface
- A11-MW1D (35' W) — Borehole Number (Offset Distance and Direction)
- SM — Borehole Lithology
- Shallow Aquifer Water Level
- Deep Aquifer Water Level
- Shallow Well Screen
- Deep Well Screen
- Inferred Soil Contact Line

Groundwater Chemical Analytical Results

- Red well screen indicates TCE was detected at a concentration greater than the RIGSL in 2018

Soil Chemical Analytical Results

- TCE detected in the analyzed soil sample
- TCE not detected in the analyzed soil sample
- PCE detected in the analyzed soil sample. If not shown, then PCE was not detected

Notes:

Qvi = Ice-Contact Deposits
TCE = Trichloroethene
PCE = Tetrachloroethene
RIGSL = Remedial investigation groundwater screening levels

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. Horizontal datum - NAD 83/91 Washington State Plane - South Zone (City of Tacoma Horizontal control Holding City Monument Numbers 411 and 414). Vertical datum NGVD 29 (brass monument at South 19th and Fawcett Avenue, elevation 165.15).
4. Ground surface elevation based on LiDAR obtained from the Puget Sound LiDAR consortium. The surface topography in the areas of existing buildings was adjusted as necessary. Well elevations for the wells installed in 2016 and 2018 are based on surveys completed by AHBL in 2016 and 2018.
5. Storm sewer and sanitary sewer elevations and locations are estimated from manhole and pipe elevations obtained from City of Tacoma govme.com.
6. Lithology shown on borings completed by GeoEngineers.

200 0 200
Horizontal Scale in Feet
50 0 50
Vertical Scale in Feet
Vertical Exaggeration: 4X

Cross Section C-C'
Along Tacoma Avenue

Potential Upgradient Sources Along Tacoma Avenue South
University of Washington - Tacoma
Tacoma, Washington

GeoEngineers

Figure 9

APPENDIX A
Report limitations and Guidelines for Use

APPENDIX A
REPORT LIMITATIONS AND GUIDELINES FOR USE[2]

This appendix provides information to help you manage your risks with respect to the use of this report. Please confer with GeoEngineers if you need to know more about how these "Report Limitations and Guidelines for Use" apply to your project or property.

Read These Provisions Closely

It is important to recognize that environmental engineering and geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce the risk of misunderstandings or unrealistic expectations that lead to disappointments, claims and disputes.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

GeoEngineers has prepared this report for the UWT Agreed Order - Remedial Investigation Work Plan Implementation project at the University of Washington-Tacoma Campus in general accordance with the scope and limitations of our proposal, dated April 16, 2018. This report has been prepared for the exclusive use of University of Washington. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

GeoEngineers structures its services to meet the specific needs of its clients. For example, an ESA study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and property. Use of this report is not recommended for any purpose or project other than as expressly stated in this report.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the University of Washington for the UWT Agreed Order - Remedial Investigation Work Plan Implementation project at the University of Washington-Tacoma Campus. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this Project. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your Project,
- not prepared for the specific site explored, or
- completed before Project changes were made.

If changes to the Project or property occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity

[2] Developed based on material provided by GBA, GeoProfessional Business Association; www.geoprofessional.org.

to review our interpretations and recommendations in the context of such changes. Based on that review, we can provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the party(ies) to whom this report is addressed. No other party may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed Project scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in our scope of service, this report does not provide any geotechnical findings, conclusions, or recommendations, including but not limited to, the suitability of subsurface materials for construction purposes.

Do Not Separate Documentation from the Report

Environmental reports often include supplemental documentation, such as maps, figures and table. Do not separate such documentation from the report. Further, do not, and do not permit any other party to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.

Environmental Regulations Change and Evolve

Some substances may be present in the vicinity of the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substances, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After the Remedial Investigation is Completed

Performance of a remedial investigation is intended to reduce uncertainty regarding the potential for contamination in connection with a property, but no investigation can wholly eliminate that uncertainty. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the subject property, by new releases of hazardous substances, new information or technology that become available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Please contact GeoEngineers before applying this report for its intended purpose so that GeoEngineers may evaluate whether changed conditions affect the continued applicability of the report.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other properties or for other on-site uses of the affected soil and/or groundwater. Note that hazardous substances may be present in some of the on-site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject property or reuse of the affected soil or groundwater on-site to evaluate the potential for associated environmental liabilities. GeoEngineers will not assume responsibility for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject property to another location, or the reuse of such soil and/or groundwater on-site in any instances that we did not recommend, know of, or control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the subject property. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions throughout the property. Actual subsurface conditions may differ significantly from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design documents. Only photographic or electronic reproduction that preserves the entire original boring log is acceptable, but separating logs from the report can create increase the risk of potential misinterpretation.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this Project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we use sources that we reasonably believe to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.