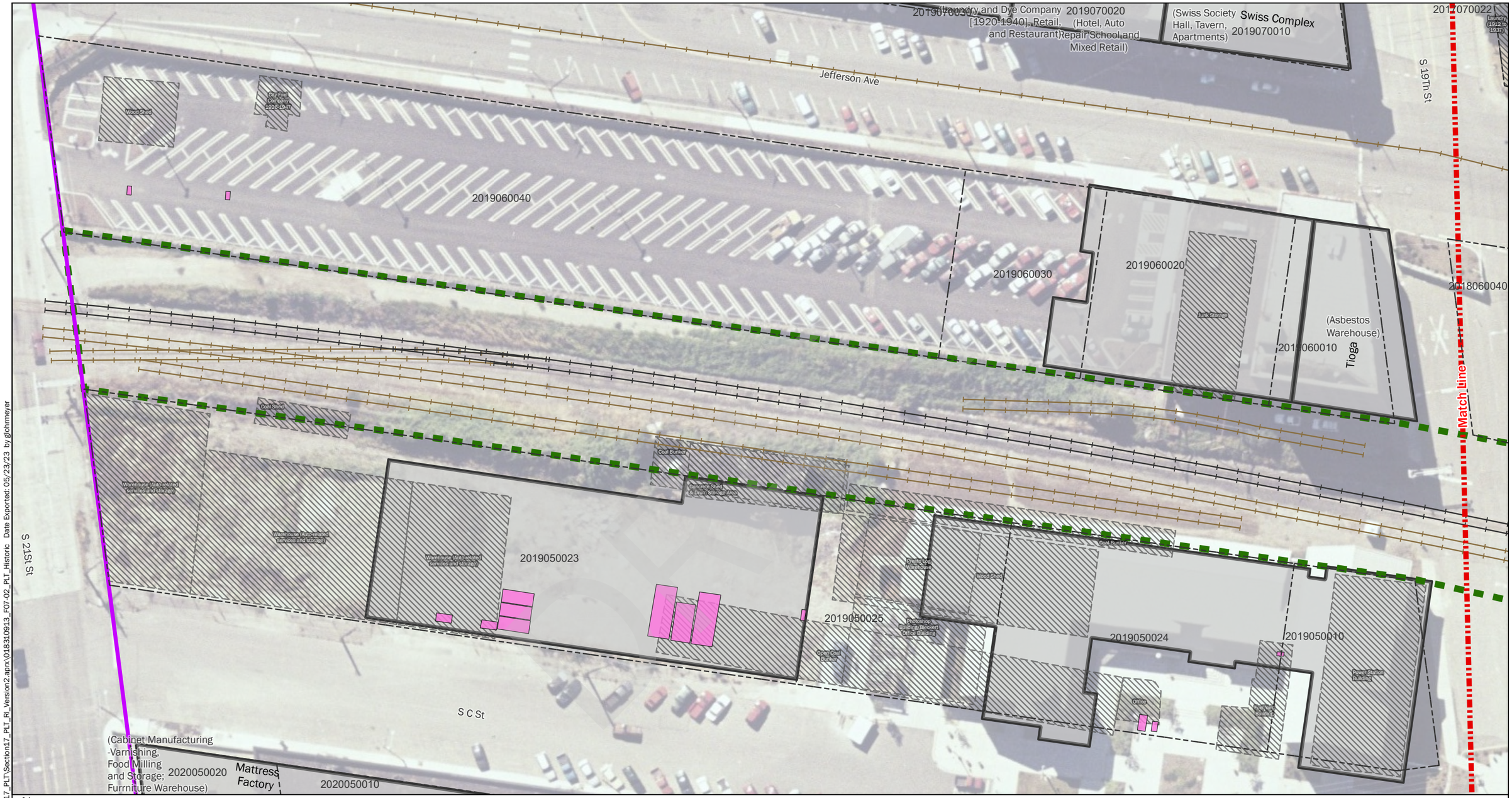


Notes:

UST = underground storage tank

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.

Data Source: Aerial provided by City of Tacoma, 1998
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Historic Parcel Boundary and Number
- Prairie Line Trail Area of Concern
- Historic Building Footprint/Feature
- Existing Building Footprint (with Former Operations)
- Former Historic Rail Line
- Existing Historic Rail Line
- Former UST Location

W N E S

50 0 50

Feet

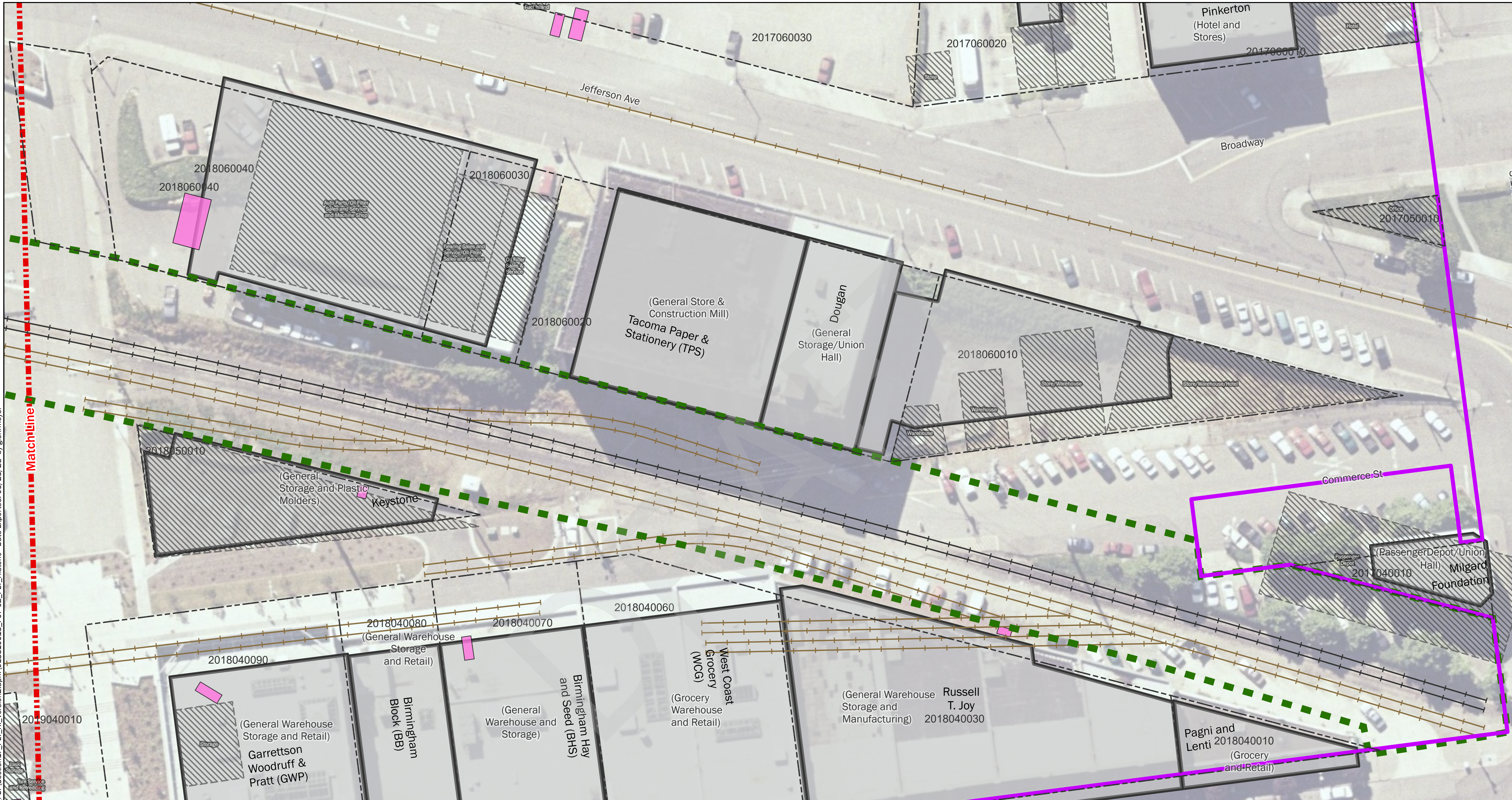
Historic Features and Land Use
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-2A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT_S\Section17_PLT_RI_Version2.aprx\0183109913_F07-02_PLT_Historic Date Exported: 05/23/23 by glohrmeyer



Notes:
UST = underground storage tank
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.

Data Source: Aerial provided by City of Tacoma, 1998
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Historic Parcel Boundary and Number
- Prairie Line Trail Area of Concern
- Historic Building Footprint/Feature
- Existing Building Footprint (with Former Operations)
- Former Historic Rail Line
- Existing Historic Rail Line
- Former UST Location

50 0 50
Feet

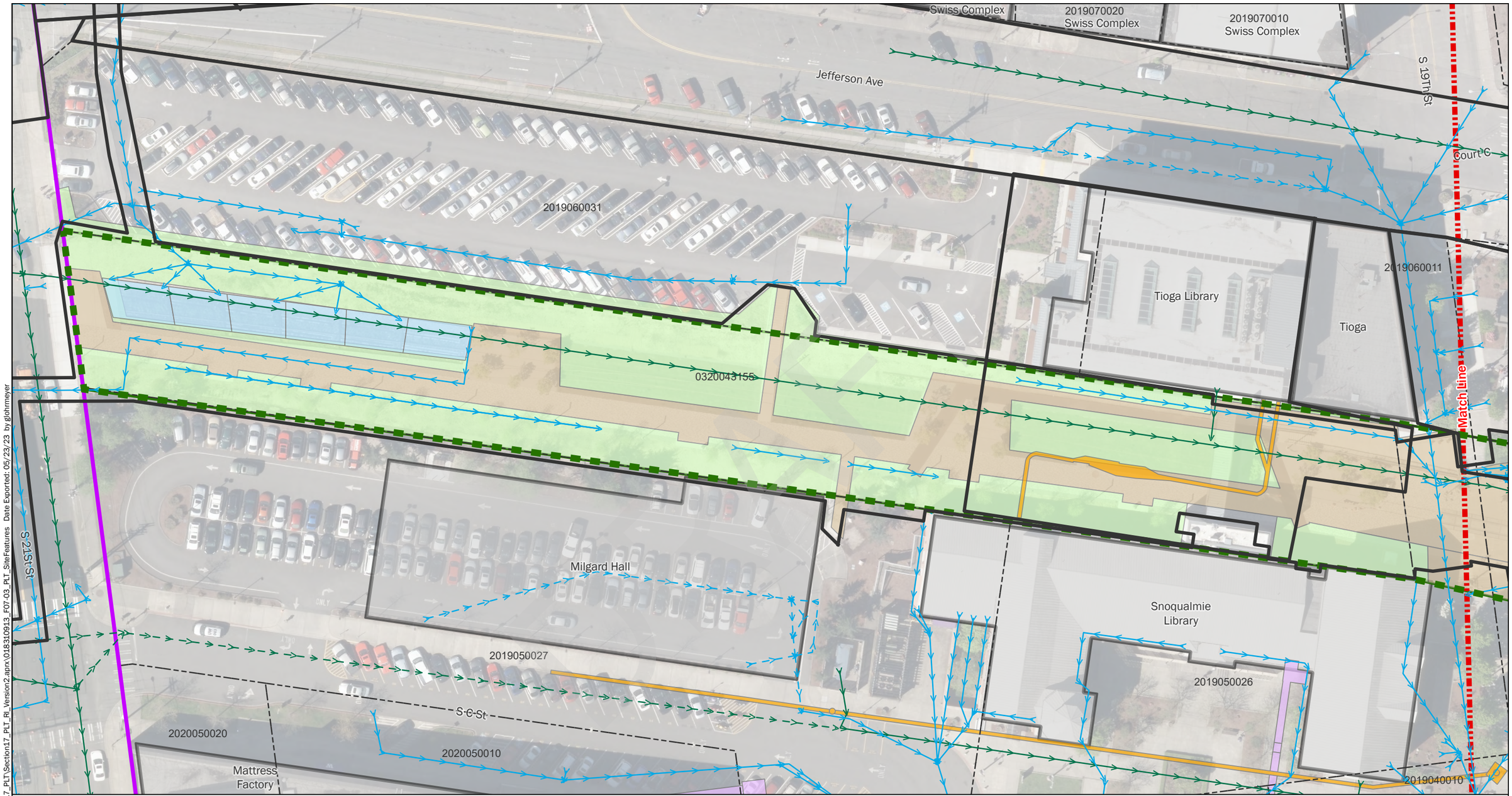
Historic Features and Land Use
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-2B

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\0183109013_F07-02_PLT_Historic Date Exported: 05/23/23 by glohrmeyer



Notes:
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.

Data Source: Aerial provided by City of Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Parcel Boundary and Number
- Prairie Line Trail Area of Concern
- Extent of Prairie Line Trail Area Capital Projects
- Existing Building Footprint
- Abandoned Sanitary Sewer Utility
- Active Sanitary Sewer Utility
- Abandoned Stormwater Utility
- Active Stormwater Utility
- Stormwater Treatment Facility
- Underground Electrical Duct Bank
- Utilidor Footprint
- Hardscape
- Green Space

W N S E

50 0 50
Feet

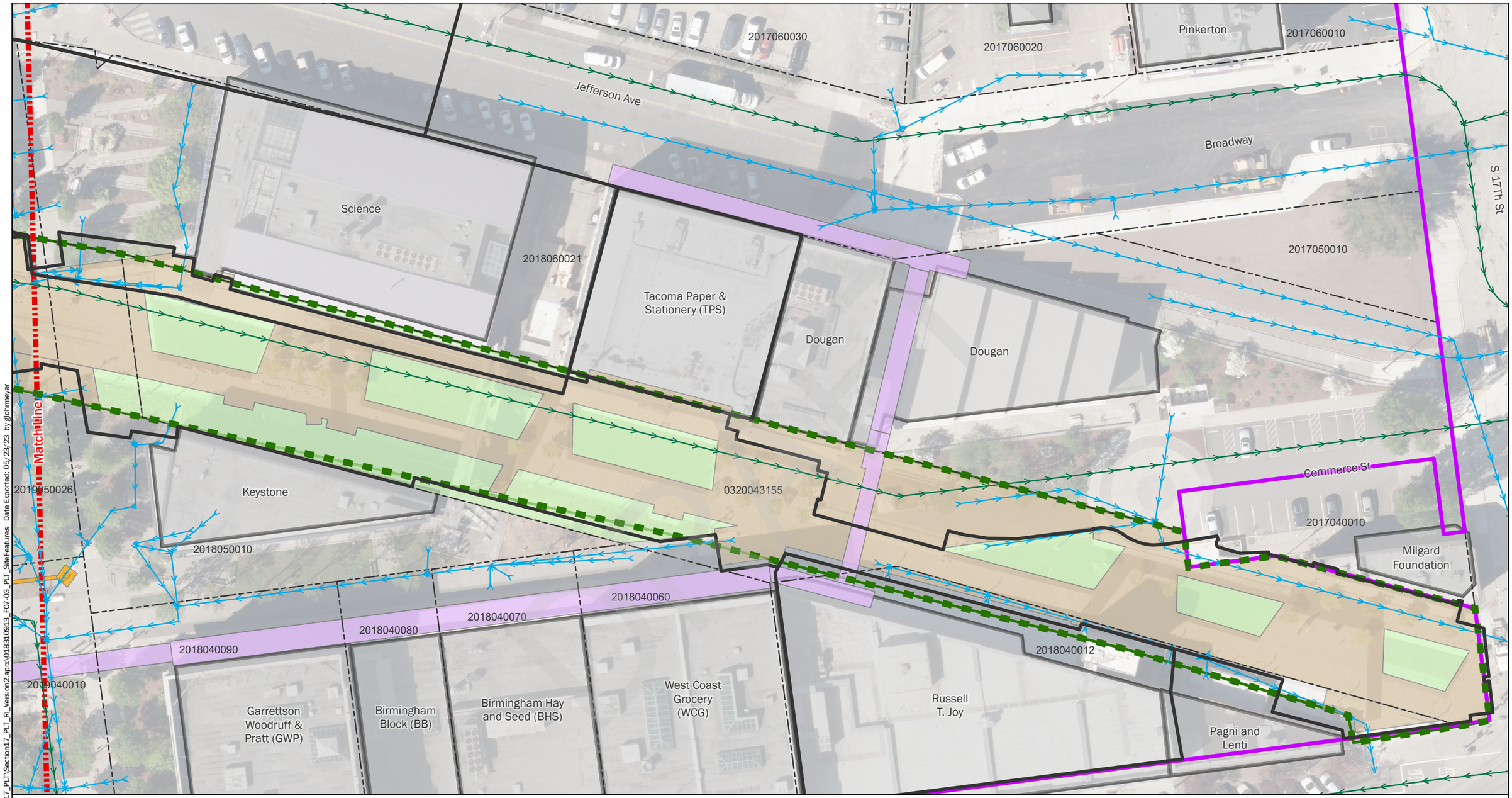
Current Features and Utility Infrastructure
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-3A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT_RI_Section17_PLT_RI_Version2.aprx\0183109_13_F07-03_PLT_SiteFeatures Date Exported: 05/23/23 by glohrmeyer



Notes:
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.

Data Source: Aerial provided by City of Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Parcel Boundary and Number
- Prairie Line Trail Area of Concern
- Extent of Prairie Line Trail Area Capital Projects
- Existing Building Footprint
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Stormwater Treatment Facility
- Underground Electrical Duct Bank
- Utilidor Footprint
- Hardscape
- Green Space

W S N E

50 0 50
Feet

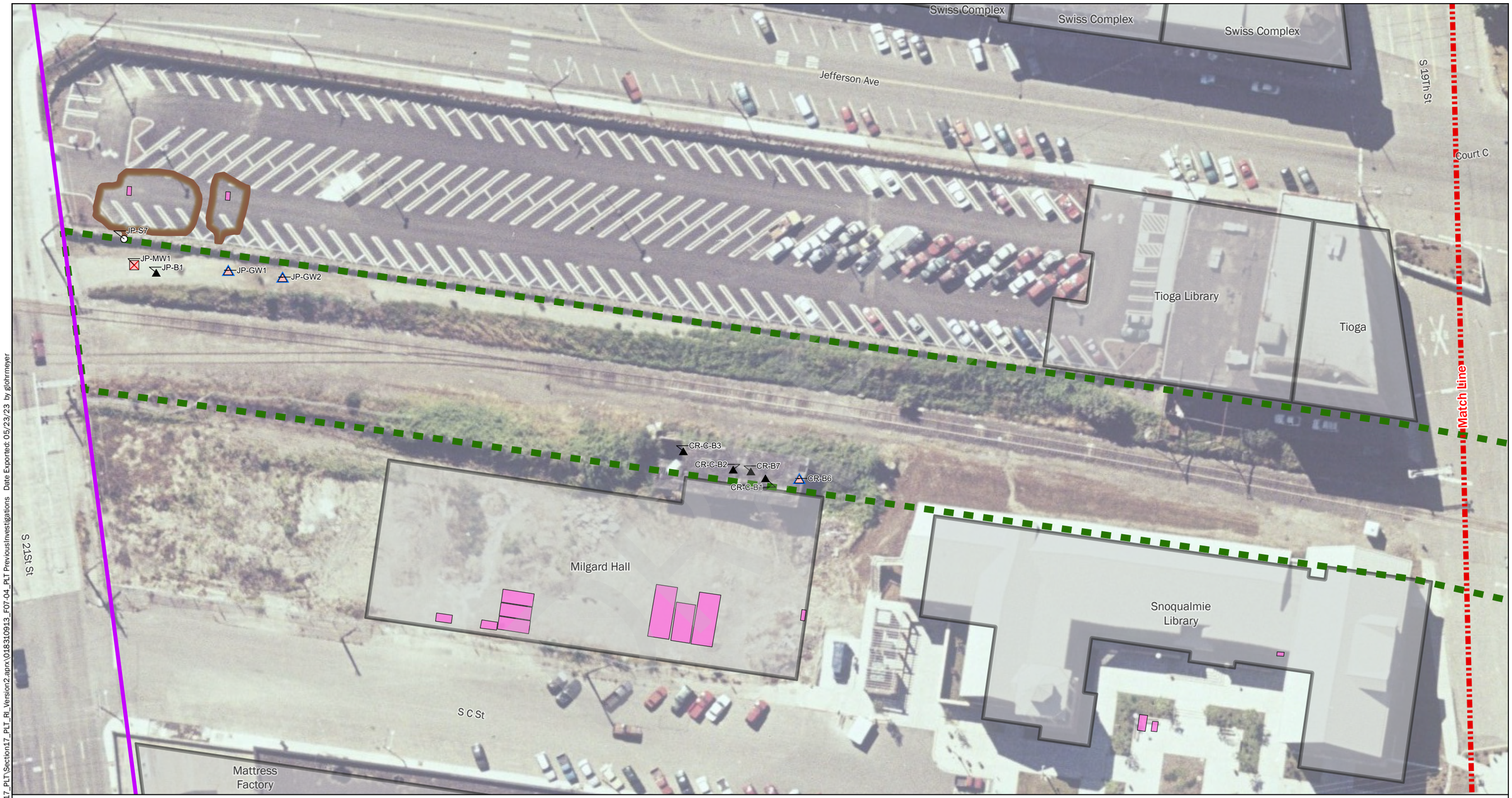
Current Features and Utility Infrastructure
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-3B

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT_RI_Version2.aprx\0183109913_F07-03_PLT_SiteFeatures Date Exported: 05/23/23 by glohrmeyer



P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\0183109913_F07-04_PLT PreviousInvestigations Date Exported: 05/23/23 by glohrmeyer

Notes:
UST = underground storage tank
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Former UST Location
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W S N E

50 0 50

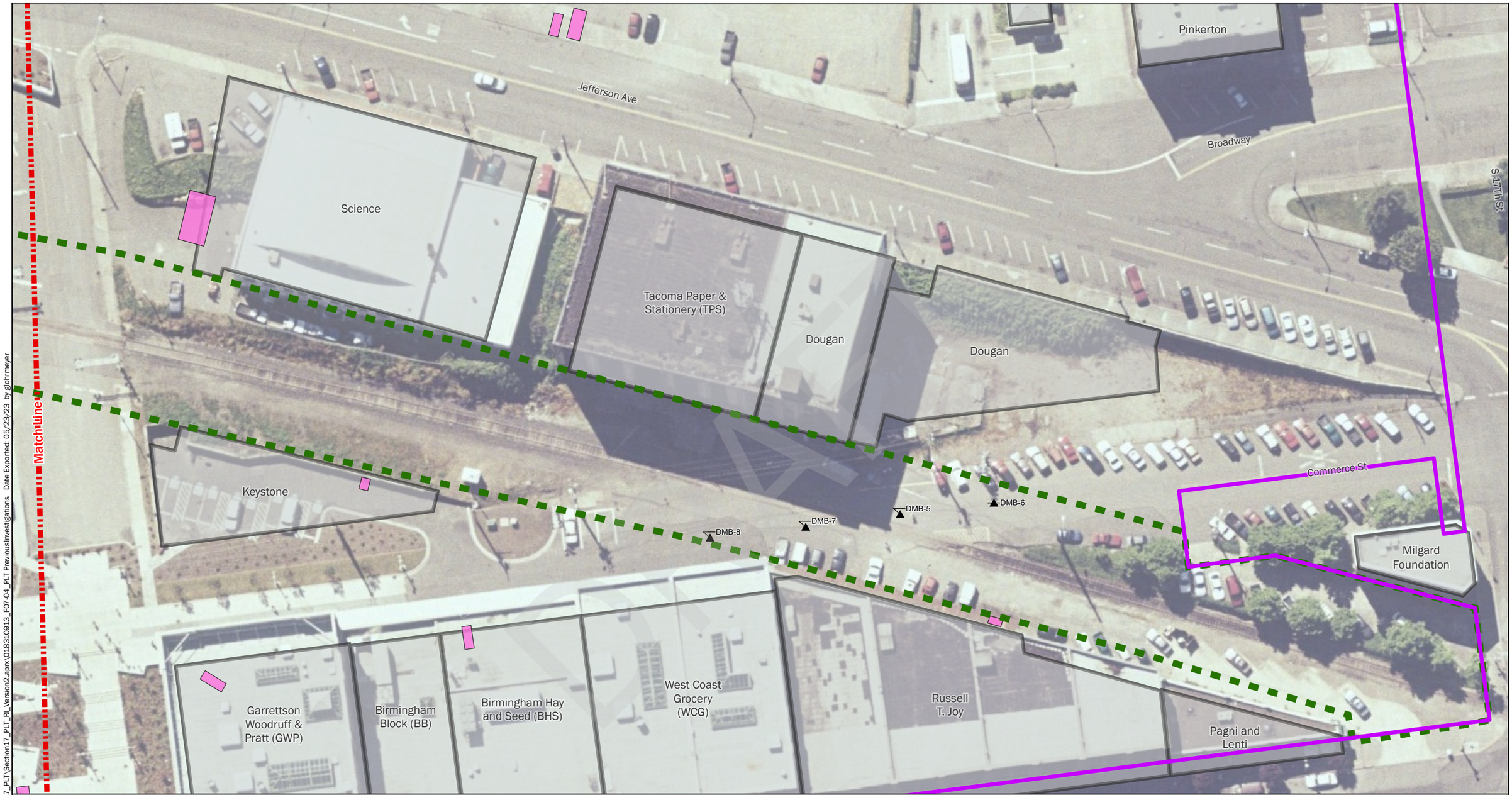
Feet

Previous Environmental Investigations and Remedial Actions
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-4A



P:\O\0183109\GIS MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\018310913_F07-04_PLT PreviousInvestigations Date Exported: 05/23/23 by glohrmeyer

Notes:
UST = underground storage tank
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Boring
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Former UST Location
- Existing Building Footprint

N

50 0 50

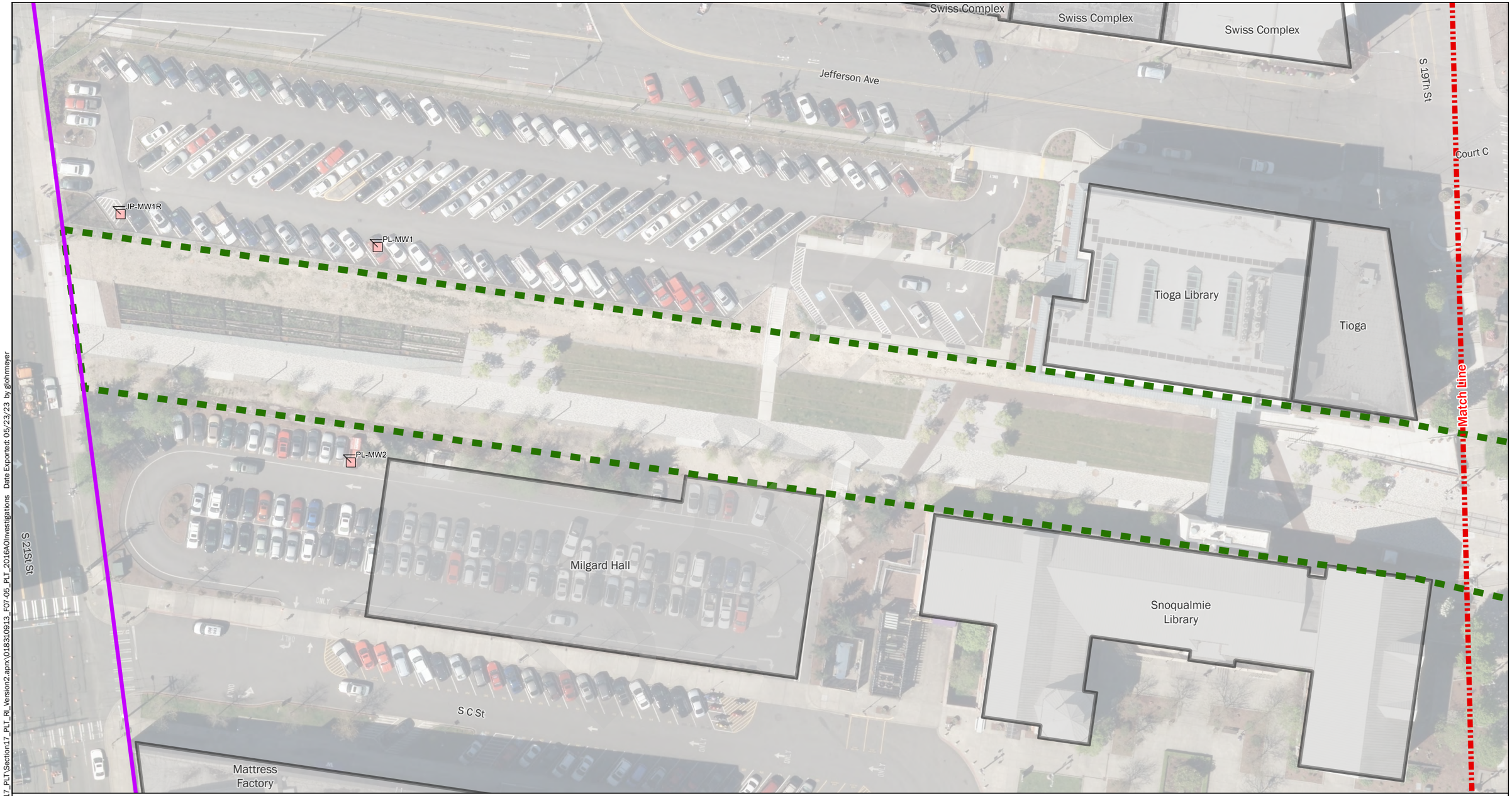
Feet

Previous Environmental Investigations and Remedial Actions
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-4B



Legend

- Qvi Aquifer Monitoring Well
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Existing Building Footprint

Notes:

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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W N E S

50 0 50

Feet

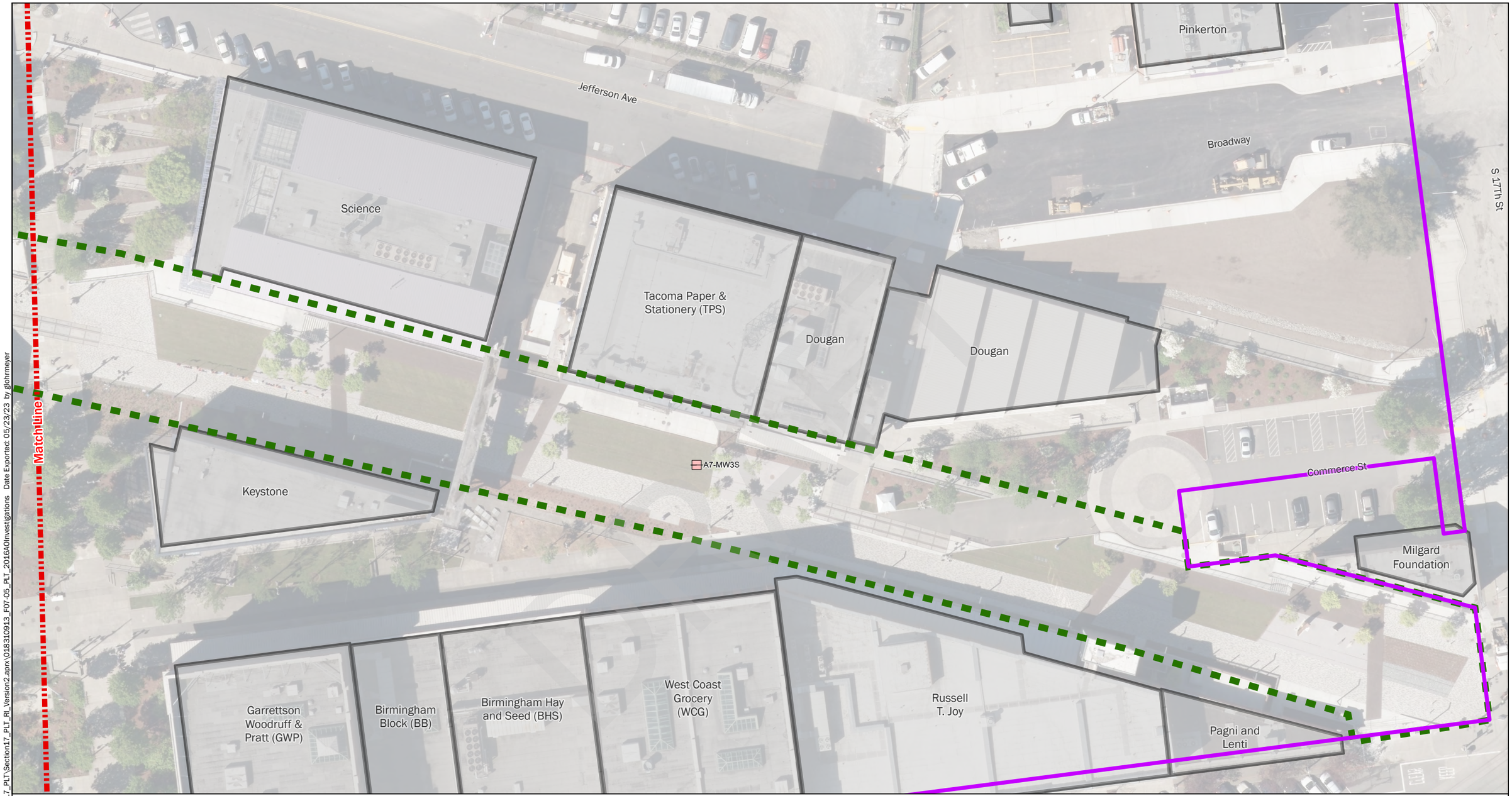
2016 Agreed Order Remedial Investigation Locations Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-5A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\0183109913_F07-05_PLT_2016AOInvestigations Date Exported: 05/23/23 by glohmeyer



P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\0183109913_F07-05_PLT_2016AOInvestigations Date Exported: 05/23/23 by glohrmeyer

Legend

- Qvi Aquifer Monitoring Well
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Existing Building Footprint

Notes:

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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W N S E

50 0 50

Feet

2016 Agreed Order Remedial Investigation Locations
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-5B

Notes:
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- Extent of Prairie Line Trail Area Capital Projects
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W S E N

50 0 50

Feet

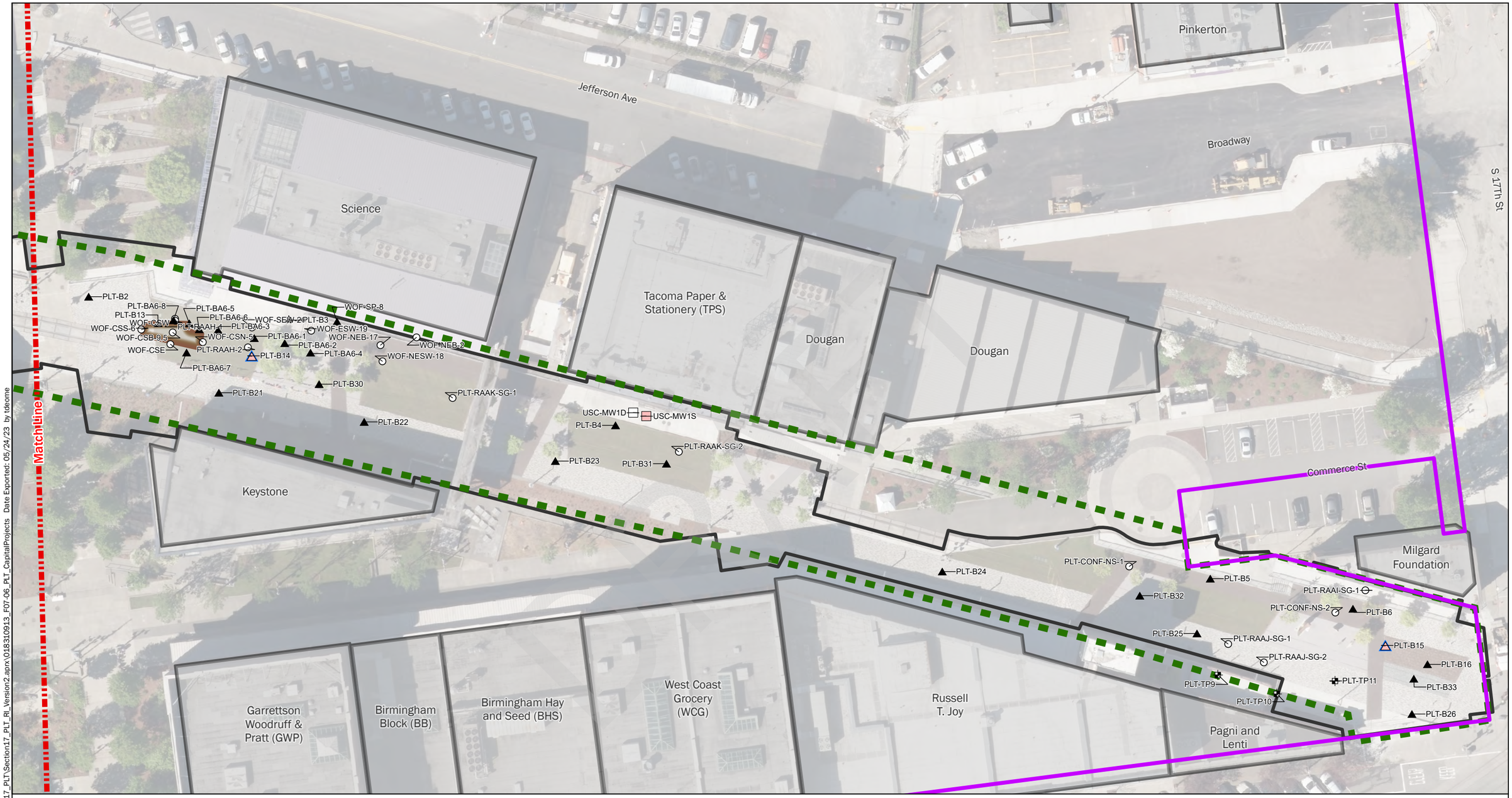
Capital Projects and Remedial Actions
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-6A

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\0183109913_F07-06_PLT_CapitalProjects Date Exported: 05/24/23 by tdeome



P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2.aprx\0183109913_F07-06_PLT_CapitalProjects Date Exported: 05/24/23 by tdeome

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- Extent of Prairie Line Trail Area Capital Projects
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

Notes:

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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W S E N

50 0 50

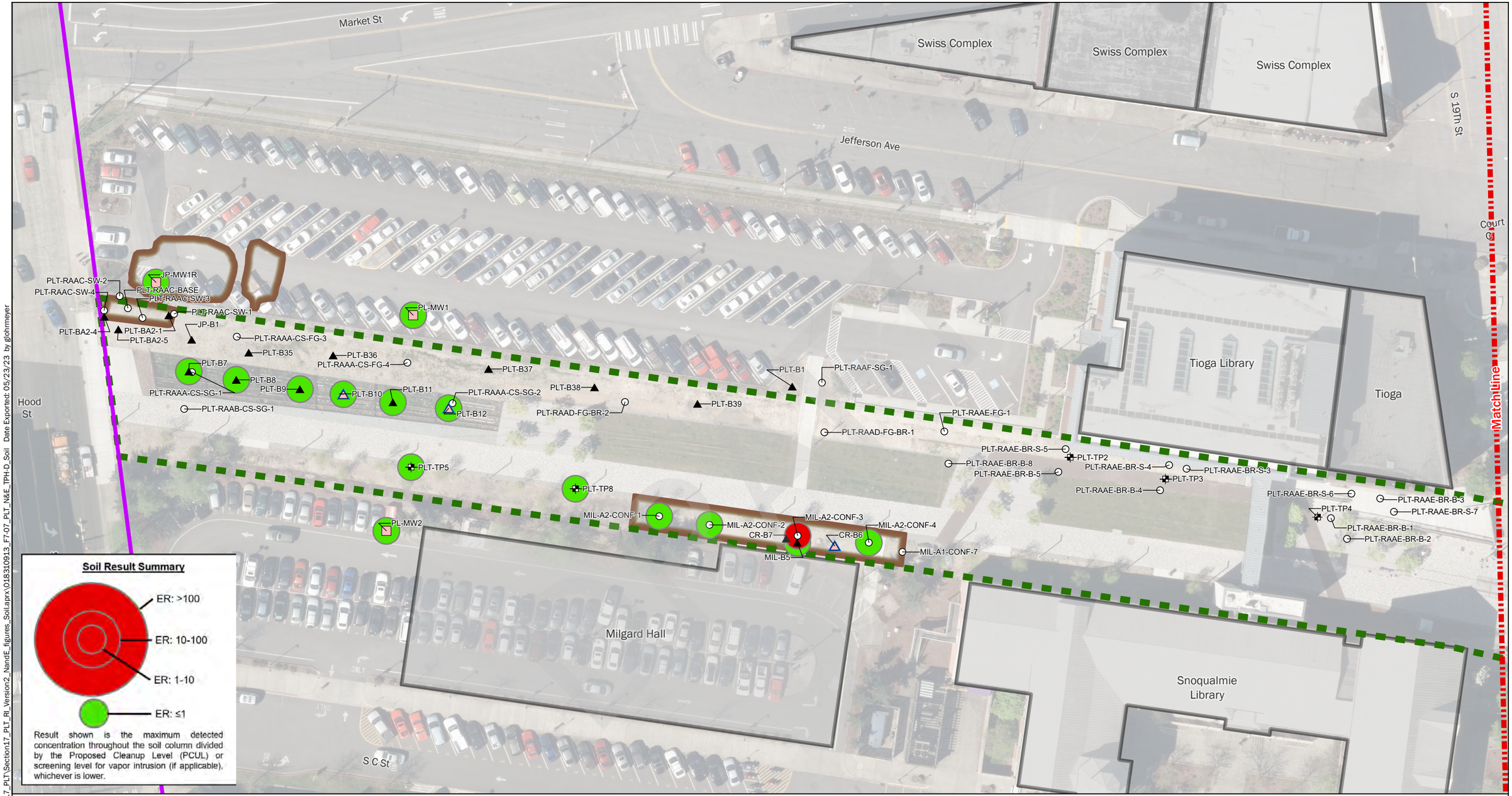
Feet

Capital Projects and Remedial Actions
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-6B



Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

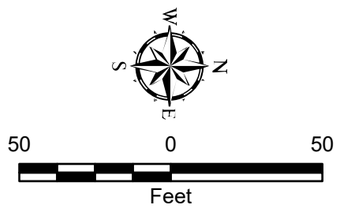
Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
* = WOF-EW-10 was located within the excavation area and was removed. However, the 2000 remedial excavation report indicated that the WOF-EW-10 sample was representative of material left in place in the east sidewall and was not sampled.
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.

Data Source: Aerial provided by City of Tacoma, 1998
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint



Summary of TPH-D in Soil
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-7A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109_13_F7-07_PLT_N&E_TPH-D_Soil Date Exported: 05/23/23 by glohnmeyer

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109913_F7-07_PLT_N&E_TPH-D_Soil Date Exported: 05/23/23 by glohnmeyer

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
* = WOF-EW-10 was located within the excavation area and was removed. However, the 2000 remedial excavation report indicated that the WOF-EW-10 sample was representative of material left in place in the east sidewall and was not sampled.
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.

Data Source: Aerial provided by City of Tacoma, 1998
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W N S E

50 0 50
Feet

Summary of TPH-D in Soil
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-7B

Notes:

TPH-O = Oil-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 2000 milligram per kilogram (mg/kg) – See Section Tables
* = WOF-EW-10 was located within the excavation area and was removed. However, the 2000 remedial excavation report indicated that the WOF-EW-10 sample was representative of material left in place in the east sidewall and was not sampled.
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.

Data Source: Aerial provided by City of Tacoma, 1998
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

50 0 50
Feet

Summary of TPH-O in Soil
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-8A

P:\O\0183109\GIS MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109_F7-08_PLT_N&E_TPH-O_Soil Date Exported: 05/23/23 by glohmmeyer

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109913_F7-08_PLT_N&E_TPH-O_Soil Date Exported: 05/23/23 by glohnmeyer

Notes:

TPH-O = Oil-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 2000 milligram per kilogram (mg/kg) – See Section Tables
* = WOF-EW-10 was located within the excavation area and was removed. However, the 2000 remedial excavation report indicated that the WOF-EW-10 sample was representative of material left in place in the east sidewall and was not sampled.
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.

Data Source: Aerial provided by City of Tacoma, 1998
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W N S E

50 0 50
Feet

Summary of TPH-O in Soil
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-8B

Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

ER = Exceedance Ratio
Basis for Screening = 0.24 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W S N E

50 0 50

Feet

Summary of Naphthalene in Soil Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-9A

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\018310913_F7-09_PLT_N&E_Naphthalene_Soil Date Exported: 05/23/23 by glohrmeyer

Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

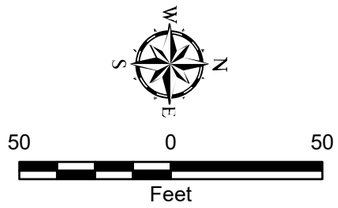
ER = Exceedance Ratio
Basis for Screening = 0.24 milligram per kilogram (mg/kg) – See Section Tables
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. 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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint



Summary of Naphthalene in Soil
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-9B

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109_F07_09_PLT_N&E_Naphthalene_Soil Date Exported: 05/25/23 by glohmmeyer

Notes:

ER = Exceedance Ratio, TEQ = toxicity equivalent concentration
cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons
Basis for Screening = 0.19 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W N E S

50 0 50
Feet

Summary of Total cPAH TEQ in Soil
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-10A

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\018310913_F07-10_PLT_N&E_cPAH_Soil Date Exported: 05/25/23 by glohmmeyer

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109913_F7.10_PLT_N&E_cPAH_Soil Date Exported: 05/23/23 by glohrmeyer

Notes:

ER = Exceedance Ratio, TEQ = toxicity equivalent concentration
cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons
Basis for Screening = 0.19 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

N

50 0 50

Feet

Summary of Total cPAH TEQ in Soil
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-10B

Notes:

ER = Exceedance Ratio
Basis for Screening = 20 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W S N E

50 0 50

Feet

Summary of Arsenic in Soil
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-11A

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\018310913_F7-11_PLT_N&E_Arsenic_Soil Date Exported: 05/23/23 by glohrmeyer

Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

ER = Exceedance Ratio
Basis for Screening = 20 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W N S E

50 0 50

Feet

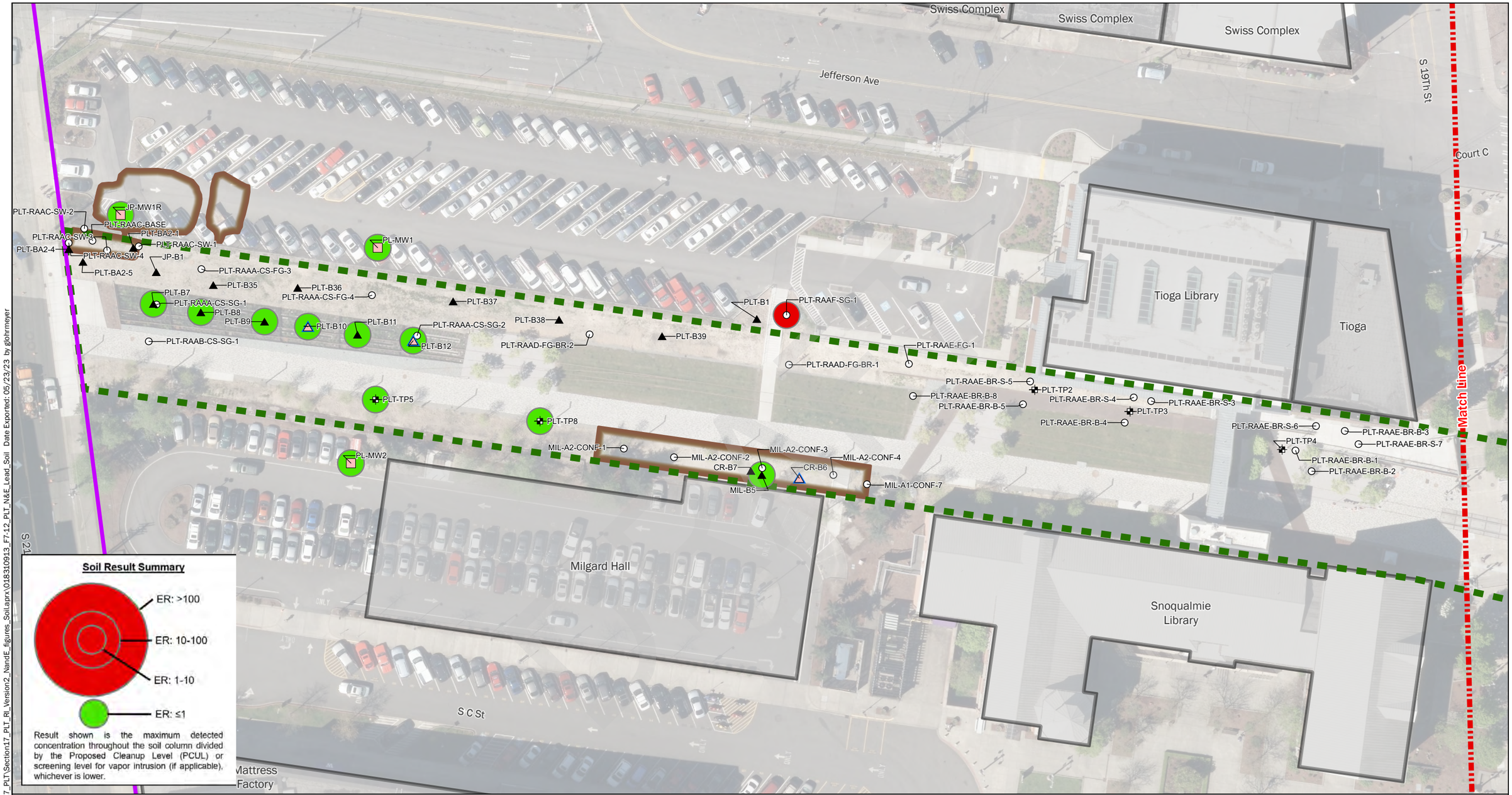
Summary of Arsenic in Soil
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-11B

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\018310913_F7-11_PLT_N&E_Arsenic_Soil Date Exported: 05/23/23 by glohrmeyer



P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\018310913_F7-12_PLT_N&E_Lead_Soil Date Exported: 05/23/23 by glohrmeyer

Notes:

ER = Exceedance Ratio
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W N S E

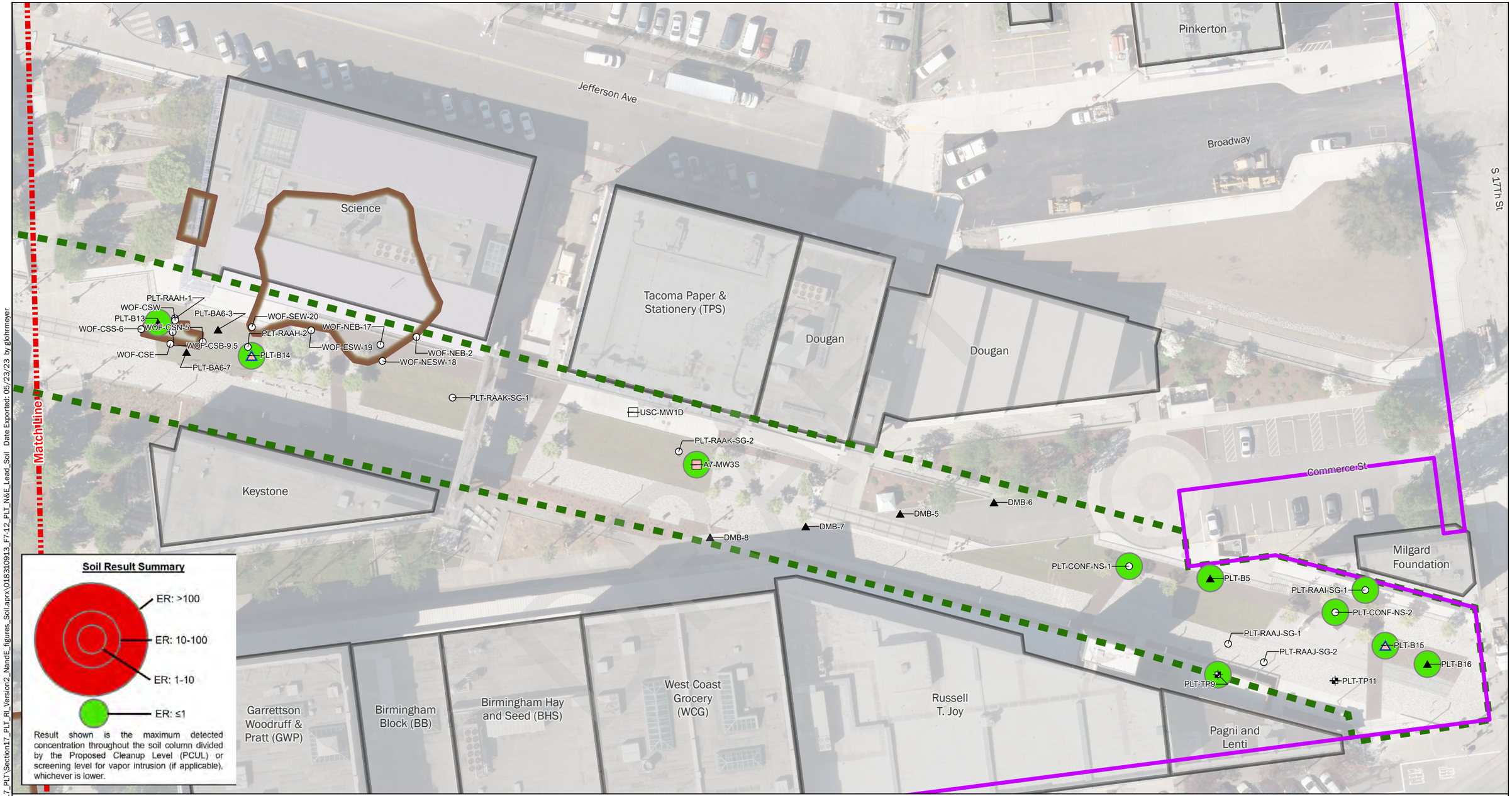
50 0 50
Feet

Summary of Lead in Soil
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-12A



P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_Soil.aprx\0183109_F7.12_PLT_N&E_Lead_Soil Date Exported: 05/23/23 by glohrmeyer

Notes:

ER = Exceedance Ratio
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Confirmation Sample
- Test Pit
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint

W N S E

50 0 50

Feet

Summary of Lead in Soil
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-12B

P:\O \0183109\ GIS \MXDs \RI_working\ Section17_PLT\ Section17_PLT_RI_Version2_NandE_figures_GW.aprx\ 0183109.13_F7-13_PLT_N&E_TPH-D_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W S N E

50 0 50
Feet

Summary of TPH-D in Qvi/Qva Aquifer Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-13A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\0183109913_F7-13_PLT_N&E_TPH-D_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W S N E

50 0 50

Feet

Summary of TPH-D in Qvi/Qva Aquifer Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-13B

P:\O \0183109\ GIS \MXDs \RI_working\ Section17_PLT\ Section17_PLT_RI_Version2_NandE_figures_GW.aprx\ 0183109_F7-14_PLT_N&E_TPH-O_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

TPH-D = Oil-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W N S E

50 0 50

Feet

Summary of TPH-O in Qvi/Qva Aquifer Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-14A

Pinkerton

Jefferson Ave

Broadway

S 17Th St

Qvi Aquifer Absent; Qvi Groundwater Drains into Qva Aquifer Upgradient of this Area.

Science

PLT-B14

Tacoma Paper & Stationery (TPS)

Dougan

Dougan

Qvi Aquifer Absent for Unknown Reason

USC-MW1D

A7-MW3S

Match Line

Keystone

Commerce St

Milgard Foundation

PLT-B15

Garrettson Woodruff & Pratt (GWP)

Birmingham Block (BB)

Birmingham Hay and Seed (BHS)

West Coast Grocery (WCG)

Russell T. Joy

Pagni and Lenti

Groundwater Result Summary

ER: >100

ER: 10-100

ER: 1-10

ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

TPH-D = Oil-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W S N E

50 0 50

Feet

Summary of TPH-O in Qvi/Qva Aquifer
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-14B

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\0183109913_F7-14_PLT_N&E_TPH-O_GW Date Exported: 05/23/23 by glohmmeyer

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\018310913_F7-15_PLT_N&E_Naphthalene_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

ER = Exceedance Ratio
Basis for Screening = 160 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W N S E

50 0 50
Feet

Summary of Naphthalene in Qvi/Qva Aquifer Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-15A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\0183109913_F7-15_PLT_N&E_Naphthalene_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

ER = Exceedance Ratio
Basis for Screening = 160 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W S N E

50 0 50

Feet

Summary of Naphthalene in Qvi/Qva Aquifer Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-15B

P:\O \0183109\ GIS \MXDs \RI_working\ Section17_PLT\ Section17_PLT_RI_Version2_NandE_figures_GW.aprx\ 0183109.913_F7.16_PLT_N&E_cPAH_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons, ER = Exceedance Ratio
TEQ = toxicity equivalent
Basis for Screening = 0.2 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W N S E

50 0 50
Feet

Summary of Total cPAH TEQ in Qvi/Qva Aquifer Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-16A

Qvi Aquifer Absent; Qvi Groundwater Drains into Qva Aquifer Upgradient of this Area.

Jefferson Ave

Pinkerton

Broadway

S 17th St

Science

Tacoma Paper & Stationery (TPS)

Dougan

Dougan

Qvi Aquifer Absent for Unknown Reason

PLT-B14

USC-MW1D

A7-MW3S

Keystone

Commerce St

Milgard Foundation

PLT-B15

Match Line

West Coast Grocery (WCG)

Russell T. Joy

Garrettson Woodruff & Pratt (GWP)

Birmingham Block (BB)

Birmingham Hay and Seed (BHS)

Pagni and Lenti

Groundwater Result Summary

ER: >100

ER: 10-100

ER: 1-10

ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons, ER = Exceedance Ratio
TEQ = toxicity equivalent
Basis for Screening = 0.2 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W N E S

50 0 50

Feet

Summary of Total cPAH TEQ in Qvi/Qva Aquifer Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-16B

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\0183109913_F7-16_PLT_N&E_cPAH_GW Date Exported: 05/23/23 by glohrmeyer

Groundwater Result Summary

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

ER = Exceedance Ratio
Basis for Screening = 8 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W S N E

50 0 50
Feet

Summary of Arsenic in Qvi/Qva Aquifer Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-17A

P:\0 0183109\ GIS \MXDs \RI_working\ Section17_PLT\ Section17_PLT_RI_Version2_NandE_figures_GW.aprx\ 0183109.13_F7.17_PLT_N&E_Arsenic_GW Date Exported: 05/23/23 by glohrmeyer

P:\O\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GWaprx\0183109913_F7-17_PLT_N&E_Arsenic_GW Date Exported: 05/23/23 by glohrmeyer

Notes:

ER = Exceedance Ratio
Basis for Screening = 8 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W E S N

50 0 50

Feet

Summary of Arsenic in Qvi/Qva Aquifer Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-17B

Groundwater Result Summary

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

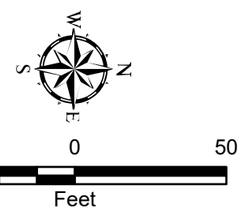
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

Notes:

ER = Exceedance Ratio
Basis for Screening = 15 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet



Summary of Lead in Qvi/Qva Aquifer
Prairie Line Trail South

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-18A

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\018310913_F7-18_PLT_N&E_Lead_GW Date Exported: 05/23/23 by glohrmeyer

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- University of Washington - Tacoma Campus Master Plan Boundary
- Prairie Line Trail Area of Concern
- Approximate Lateral Extent of Previous Excavation
- Existing Building Footprint
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

Notes:

ER = Exceedance Ratio
Basis for Screening = 15 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W N E S

50 0 50

Feet

Summary of Lead in Qvi/Qva Aquifer
Prairie Line Trail North

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 7-18B

P:\0\0183109\GIS\MXDs\RI_working\Section17_PLT\Section17_PLT_RI_Version2_NandE_figures_GW.aprx\0183109913_F7-18_PLT_N&E_Lead_GW Date Exported: 05/23/23 by glohrmeyer

Table 8-1

Soil Investigation Summary - 1742 Jefferson

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]													
							Petroleum Hydrocarbons				VOCs									
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
1997 Agreed Order Investigation																				
JS-B1	08/24/98	URS	Exploration	Direct Push	91	12		X	X	X	X						X			
JS-B2	08/24/98	URS	Exploration	Direct Push	91	12		X	X	X	X						X			
JS-B3	08/24/98	URS	Exploration	Direct Push	91	12		X	X	X	X						X			
JS-B5	08/24/98	URS	Exploration	Direct Push	91	12			X	X	X	X	X					X		
JS-B6	08/24/98	URS	Exploration	Direct Push	91	8			X	X	X	X	X					X		
JS-B7	08/24/98	URS	Exploration	Direct Push	91	15			X	X	X	X	X					X		
JS-B8	03/26/99	URS	Exploration	Direct Push	91	15		X	X	X	X						X			
JS-B9	03/26/99	URS	Exploration	Direct Push	91	15		X	X	X	X						X			
JS-B10	03/26/99	URS	Exploration	Direct Push	91	15		X	X	X	X						X			
JS-MW1	09/14/98	URS	Exploration	HSA	90.39	49			X	X	X									
JS-MW2	09/15/98	URS	Exploration	HSA	90.69	49			X	X	X									
Supplemental Investigations Under the 1997 Agreed Order																				
2B-B2	06/18/13	GeoEngineers	Exploration	Direct Push	93	10	X				X	X	X	X	X		X			
JS-MW3S	09/04/13	GeoEngineers	Exploration	Sonic	89.47	22					X	X	X	X						
JS-MW7	09/03/13	GeoEngineers	Exploration	Sonic	97.03	12	X				X	X	X	X						
JS-MW7A	09/12/13	GeoEngineers	Exploration	Sonic	97.00	12	X		X	X	X	X	X	X	X		X			
1997 Agreed Order Remedial Action - 1742 Jefferson																				
JSP-CS-A BASE	08/29/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-AS	08/29/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-AW	08/29/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-B1BASE	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-B1S	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-B1SE	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-B1SW	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-B2BASE	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-B2N	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-B2NW	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-BNE	08/29/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-TP6BASE	08/30/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-TP6N	08/30/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-TP6NE	08/31/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-TP6NW	08/30/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-TP6S	08/31/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-TP6SE	08/30/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]													
							Petroleum Hydrocarbons				VOCs									
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
JSP-CS-TP6SW	08/30/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-TP6-PCS	08/30/12	GeoEngineers	Confirmation	Grab	91	--		X	X	X	X	X	X	X	X		X			
JSP-CS-TP7BASE	09/04/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-CS-TP8	09/06/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-TP5-2 NE	08/28/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
JSP-TP5-BOTTOM	08/28/12	GeoEngineers	Confirmation	Grab	91	--		X			X						X			
2016 Agreed Order Investigation																				
A7-MW2S	11/11/16	GeoEngineers	Exploration	Sonic	87.04	25						X	X	X			X			
JS-MW1S	06/17/19	GeoEngineers	Exploration	Sonic	90.50	30	X				X	X	X	X	X		X			

Notes:

[1] Sample locations are shown on Figures 8-4 and 8-5. Location identification nomenclature was added to select wells as necessary (for example JSP- was added to JSP-CS-AS).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with 1742 Jefferson are summarized in Table 8-4. Chemical analytical results associated with other Areas of Concernand area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

HSA = hollow stem auger

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 8-2

Groundwater Investigation Summary - 1742 Jefferson

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
1997 Agreed Order Investigation																	
JS-B2	08/24/98	URS	Temporary	Qvi			X	X									
JS-B5	08/24/98	URS	Temporary	Qvi			X	X									
JS-B6	08/24/98	URS	Temporary	Qvi			X	X									
JS-B8	03/26/99	URS	Temporary	Qvi		X	X	X	X								
JS-B9	03/26/99	URS	Temporary	Qvi		X	X	X	X								
JS-B10	03/25/99	URS	Temporary	Qvi		X			X								
JS-GW2	03/29/01	URS	Temporary	Qva					X	X	X	X					
JS-MW1	10/26/98	URS	Permanent	Qva		X	X	X	X								
JS-MW1	01/11/99	URS	Permanent	Qva		X	X	X	X								
JS-MW1	04/19/99	URS	Permanent	Qva		X	X	X	X								
JS-MW1	09/08/99	URS	Permanent	Qva		X	X	X	X		X						
JS-MW2	10/26/98	URS	Permanent	Qva		X	X	X	X								
JS-MW2	01/11/99	URS	Permanent	Qva		X	X	X	X								
JS-MW2	04/19/99	URS	Permanent	Qva		X	X	X	X								
JS-MW2	09/08/99	URS	Permanent	Qva		X	X	X	X		X						
JS-MW2	04/05/00	URS	Permanent	Qva					X		X						
JS-MW2	09/08/00	URS	Permanent	Qva					X		X						
JS-MW3	04/03/01	URS	Permanent	Qva					X		X						
UG-MW3	10/26/98	URS	Permanent	Qva		X	X	X	X		X						
UG-MW3	04/19/99	URS	Permanent	Qva		X	X	X	X		X						
UG-MW3	04/05/00	URS	Permanent	Qva					X		X						
UG-MW3	09/08/00	URS	Permanent	Qva					X		X						
Supplemental Investigations Under the 1997 Agreed Order																	
JS-MW1	06/18/13	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW2	06/18/13	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3	06/25/13	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3S	09/13/13	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X		X		X	
JS-MW3S	01/22/14	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
JS-MW7A	01/22/14	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW3	06/18/13	GeoEngineers	Permanent	Qva					X	X	X	X					
2016 Agreed Order Investigation																	
JS-MW1	12/15/16	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW1	03/25/19	GeoEngineers	Permanent	Qva		X			X	X	X	X					
JS-MW1	09/03/19	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW1	03/12/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
JS-MW1	09/03/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
JS-MW1S	09/06/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
JS-MW1S	03/11/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
JS-MW1S	09/03/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
JS-MW2	12/15/16	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW2	03/25/19	GeoEngineers	Permanent	Qva		X			X	X	X	X					
JS-MW2	09/06/19	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW2	03/17/20	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW2	09/03/20	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3	12/15/16	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3	03/11/19	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3	09/03/19	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3	03/11/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
JS-MW3	09/03/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
JS-MW3S	12/15/16	GeoEngineers	Permanent	Qvi					X	X	X	X					
JS-MW3S	03/27/19	GeoEngineers	Permanent	Qvi						X	X	X					
JS-MW3S	09/03/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
JS-MW3S	03/11/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
JS-MW3S	09/03/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
JS-MW7A	12/14/16	GeoEngineers	Permanent	Qvi						X	X	X					
JS-MW7A	03/11/19	GeoEngineers	Permanent	Qvi						X	X	X					
JS-MW7A	09/05/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
JS-MW7A	03/09/20	GeoEngineers	Permanent	Qvi					X	X	X	X					
JS-MW7A	09/03/20	GeoEngineers	Permanent	Qvi					X	X	X	X					
UG-MW3	12/13/16	GeoEngineers	Permanent	Qva						X	X	X					
UG-MW3	03/11/19	GeoEngineers	Permanent	Qva						X	X	X					
UG-MW3	09/05/19	GeoEngineers	Permanent	Qva					X	X	X	X					
UG-MW3	03/13/20	GeoEngineers	Permanent	Qva					X	X	X	X					
UG-MW3	09/03/20	GeoEngineers	Permanent	Qva					X	X	X	X					
Tacoma Paper and Stationery Building Capital Project																	
JS-MW3	10/27/14	GeoEngineers	Permanent	Qva					X	X	X	X					
JS-MW3S	10/27/14	GeoEngineers	Permanent	Qvi			X	X	X	X	X	X					

Notes:

[1] Sample locations are shown on Figures 8-4 and 8-5. Location identification nomenclature was added to select wells as necessary (for example JSP- was added to JSP-CS-AS).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with 1742 Jefferson are summarized in Table 8-4. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

BTEX = benzene, toluene, ethylbenzene and xylenes

bgs = below ground surface

CVOCs = chlorinated volatile organic compounds

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = Total Petroleum Hydrocarbons - Hydrocarbon Identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 8-3

Well Construction Details - 1742 Jefferson

University of Washington - Tacoma Campus

Tacoma, Washington

Well Identification[1]	Well Construction Date	Installed By	Ground Surface Elevation[2] (feet NGVD29)	Top of Casing Elevation (feet NGVD29)[2]	Top of Well Screen (feet bgs)	Bottom of Well Screen (feet bgs)	Top of Well Screen Elevation (feet NGVD29)	Bottom of Well Screen Elevation (feet NGVD29)	Lithology Across Well Screen Interval	Well Status	Well Type
1997 Agreed Order Investigation											
JS-B2	08/24/98	URS	91	--	3	6	88	85	Qvi	Decommissioned	Temporary
JS-B5	08/24/98	URS	91	--	3	6	88	85	Qvi	Decommissioned	Temporary
JS-B6	08/24/98	URS	91	--	3	6	88	85	Qvi	Decommissioned	Temporary
JS-B8	03/26/99	URS	91	--	6	9	85	82	Qvi	Decommissioned	Temporary
JS-B9	03/26/99	URS	91	--	3	6	88	85	Qvi	Decommissioned	Temporary
JS-B10	03/26/99	URS	91	--	6	9	85	82	Qvi	Decommissioned	Temporary
JS-GW2	03/29/01	URS	91	--	43	45	48	46	Qva	Decommissioned	Temporary
JS-MW1	09/14/98	URS	90.39	90.01	34	49	56	41	Qva	Existing	Permanent
JS-MW2	09/15/98	URS	90.69	90.17	34	49	57	42	Qva	Existing	Permanent
JS-MW3	03/30/01	URS	89.12	88.76	39	54	50	35	Qva	Existing	Permanent
UG-MW3	09/29/98	URS	100.25	99.62	37	53	63	47	Qva	Existing	Permanent
Supplemental Investigations Under the 1997 Agreed Order											
JS-MW3S	09/04/13	GeoEngineers	89.47	88.97	12	22	77	67	Qvi	Existing	Permanent
JS-MW7	09/03/13	GeoEngineers	97.03	96.75	7	12	90	85	Qvi	Decommissioned	Permanent
JS-MW7A	09/12/13	GeoEngineers	97.00	96.75	7	12	90	85	Qvi	Existing	Permanent
2016 Agreed Order Investigation											
A7-MW2S	11/11/16	GeoEngineers	87.04	86.79	5	17	82	70	Qvi	Existing	Permanent
JS-MW1S	06/17/19	GeoEngineers	90.50	89.79	13	23	77	67	Qvi	Existing	Permanent

Notes:

[1] Well locations are shown on Figures 8-4 and 8-5. Location identification nomenclature was added to select wells as necessary (for example JSP- was added to JSP-CS-AS).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

bgs = below ground surface

NGVD29 = National Geodetic Vertical Datum of 1929

Qvi = Vashon ice-contact deposits

Qva = Vashon advance outwash

URS = United Research Services Corporation (formerly)

Table 8-4

Summary of Soil Chemical Analytical Results - 1742 Jefferson

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
1997 Agreed Order Investigation																									
JS-B1	JS-B1-1.5_19980824	08/24/98	Exploration	1.5 - 1.5	Removed	--	235	193	1,070	*0.05 U*	20.9	0.399	3.06	--	--	--	--	--	--	--	--	--	--	--	8.26 J	--
JS-B1	JS-B1-4.5_19980824	08/24/98	Exploration	4.5 - 4.5	Removed	--	5.0 U	23	199	*0.05 U*	0.208	0.05 U	0.10 U	--	--	--	--	--	--	--	--	--	--	--	10.5	--
JS-B1	JS-B1-7_19980824	08/24/98	Exploration	7 - 7	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B1	JS-B1-9.5_19980824	08/24/98	Exploration	9.5 - 9.5	Present	--	5.0 U	28.5	246	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B1	JS-B1-12_19980824	08/24/98	Exploration	12 - 12	Present	--	--	10.0 UJ	25.0 UJ	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B2	JS-B2-3_19980824	08/24/98	Exploration	3 - 3	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	3.00 U	--
JS-B2	JS-B2-7_19980824	08/24/98	Exploration	7 - 7	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	10	--
JS-B3	JS-B3-1.5_19980824	08/24/98	Exploration	1.5 - 1.5	Present	--	5.0 U	29.7	137	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	7.71 J	--
JS-B3	JS-B3-7_19980824	08/24/98	Exploration	7 - 7	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	2.30 U	--
JS-B5	JS-B5-1.5_19980824	08/24/98	Exploration	1.5 - 1.5	Removed	--	--	13.5	45.4	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	--	ND	--	--	--	--	--	0.05 U
JS-B5	JS-B5-4.5_19980824	08/24/98	Exploration	4.5 - 4.5	Removed	--	--	241	150	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	--	ND	--	--	--	--	--	0.05 U
JS-B5	JS-B5-7_19980824	08/24/98	Exploration	7 - 7	Removed	--	--	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B6	JS-B6-4.5_19980824	08/24/98	Exploration	4.5 - 4.5	Removed	--	--	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	--	ND	--	--	--	--	--	0.05 U
JS-B6	JS-B6-7_19980824	08/24/98	Exploration	7 - 7	Removed	--	--	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	--	ND	--	--	--	--	--	0.05 U
JS-B7	JS-B7-3_19980824	08/24/98	Exploration	3 - 3	Removed	--	--	4,840	3,720	1.21	1.19	*1.00 U*	*2.00 U*	7.87	1.93	--	--	--	--	DET	--	--	--	--	--	0.05 U
JS-B7	JS-B7-4.5_19980824	08/24/98	Exploration	4.5 - 4.5	Removed	--	--	1,540	1,390	*1.00 U*	*1.00 U*	*1.00 U*	*2.00 U*	4.89	1.47	--	--	--	--	ND	--	--	--	--	--	0.05 U
JS-B7	JS-B7-7_19980824	08/24/98	Exploration	7 - 7	Removed	--	--	13.5	25.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05 U
JS-B7	JS-B7-12_19980824	08/24/98	Exploration	12 - 12	Present	--	--	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B8	JS-B8-3_19990326	03/26/99	Exploration	3 - 6	Present	--	5.00 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	2.21	--
JS-B8	JS-B8-9_19990326	03/26/99	Exploration	9 - 9	Present	--	5.00 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	1.57	--
JS-B9	JS-B9-9_19990326	03/26/99	Exploration	9 - 9	Present	--	5.00 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	4.88	--
JS-B9	JS-B9-12_19990326	03/26/99	Exploration	12 - 12	Present	--	5.00 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	3.14	--
JS-B10	JS-B10-9_19990325	03/25/99	Exploration	9 - 9	Present	--	5.00 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	9.09	--
JS-B10	JS-B10-12_19990325	03/25/99	Exploration	12 - 12	Present	--	5.00 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	2.95	--
JS-MW1	JS-MW1-10_19980914	09/14/98	Exploration	10 - 10	Present	--	--	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW1	JS-MW1-35_19980914	09/14/98	Exploration	35 - 35	Present	--	--	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW2	JS-MW2-10_19980915	09/15/98	Exploration	10 - 10	Present	--	--	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW2	JS-MW2-35_19980915	09/15/98	Exploration	35 - 35	Present	--	--	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Supplemental Investigations Under the 1997 Agreed Order																									
2B-B2	2B-B2-1-2	06/18/13	Exploration	1 - 2	Present	ND	--	--	--	0.00093 U	0.0093 U	0.00093 U	0.0019 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	ND	**0.014**	**0.074**	11 U	0.57 U	**30**	--
2B-B2	2B-B2-5-6	06/18/13	Exploration	5 - 6	Present	ND	--	--	--	0.00084 U	0.0084 U	0.00084 U	0.0017 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	ND	0.00084 U	0.0055 U	11 U	0.55 U	5.5 U	--
JS-MW3S	130904-S-1	09/04/13	Exploration	8 - 9	Present	--	--	--	--	0.00090 U	0.0045 U	0.00090 U	0.0018 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	ND	0.00090 U	--	--	--	--	--
JS-MW3S	JS-MW3S-8-9	09/04/13	Exploration	8 - 9	Present	--	--	--	--	0.00091 U	0.0045 U	0.00091 U	0.0018 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	ND	0.00091 U	--	--	--	--	--
JS-MW3S	JS-MW3S-10.5-11.5	09/04/13	Exploration	10.5 - 11	Present	--	--	--	--	0.00088 U	0.0044 U	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	ND	0.00088 U	--	--	--	--	--
JS-MW3S	JS-MW3S-12-12.5	09/04/13	Exploration	12 - 12.5	Present	--	--	--	--	0.0011 U	0.0053 U	0.0011 U	0.0021 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	--	--	--	--	--
JS-MW3S	JS-MW3S-13-14	09/04/13	Exploration	13 - 14	Present	--	--	--	--	0.00088 U	0.0044 U	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	ND	0.00088 U	--	--	--	--	--
JS-MW3S	JS-MW3S-18-19	09/04/13	Exploration	18 - 19	Present	--	--	--	--	0.00092 U	0.0046 U	0.00092 U	0.0018 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	ND	0.00092 U	--	--	--	--	--
JS-MW3S	JS-MW3S-21-22	09/04/13	Exploration	21 - 22	Present	--	--	--	--	0.00082 U	0.0041 U	0.00082 U	0.0016 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	ND	0.00082 U	--	--	--	--	--
JS-MW3S	JS-MW3S-23-24	09/04/13	Exploration	23 - 24	Present	--	--	--	--	0.00089 U	0.0045 U	0.00089 U	0.0018 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	ND	0.00089 U	--	--	--	--	--
JS-MW3S	JS-MW3S-24-25	09/04/13	Exploration	24 - 25	Present	--	--	--	--	0.00083 U	0.0041 U	0.00083 U	0.0017 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	ND	0.00083 U	--	--	--	--	--
JS-MW7	JS-MW7-7-8	09/03/13	Exploration	7 - 8	Present	--	--	--	--	0.00080 U	0.0040 U	0.00080 U	0.0016 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	**DET**	0.00080 U	--	--	--	--	--
JS-MW7	JS-MW7-8-9	09/03/13	Exploration	8 - 9	Present	--	--	--	--	0.00099 U	0.0049 U	0.00099 U	0.0020 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	**DET**	0.00099 U	--	--	--	--	--
JS-MW7	JS-MW7-11-12	09/03/13	Exploration	11 - 12	Present	--	--	--	--	0.00081 U	0.0040 U	0.00081 U	0.0016 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	**DET**	0.00081 U	--	--	--	--	--
JS-MW7	JS-MW7-13-14	09/03/13	Exploration	13 - 14	Present	--	--	--	--	0.00079 U	0.0039 U	0.00079 U	0.0016 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	ND	0.00079 U	--	--	--	--	--
JS-MW7	130903-S-1	09/03/13	Exploration	18 - 19	Present	ND	--	--	--	0.00073 U	0.0036 U	0.00073 U	0.0015 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	**DET**	0.00073 U	--	--	--	--	--
JS-MW7	JS-MW7-18-19	09/03/13	Exploration	18 - 19	Present	--	--	--	--	0.00073 U	0.0037 U	0.00073 U	0.0015 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	**DET**	0.00073 U	--	--	--	--	--
JS-MW7	JS-MW7-22-23	09/03/13	Exploration	22 - 23	Present	--	--	--	--	0.00080 U	0.0040 U	0.00080 U	0.0016 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	**DET**	0.00080 U	--	--	--	--	--
JS-MW7	JS-MW7-24-25	09/03/13	Exploration	24 - 25	Present	--	--	--	--	0.00085 U	0.0042 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	**DET**	0.00085 U	--	--	--	--	--
JS-MW7A	JS-MW7A-0-1	09/12/13	Exploration	0 - 1	Present	**D,0**	--	29 U	**210**	0.00097 U	0.0048 U	0.00097 U	0.0019 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	ND	**0.36**	**3.5**	11 U	**0.65**	**1,100**	--
JS-MW7A	JS-MW7A-1-2	09/12/13	Exploration	1 - 2	Present	ND	--	--	--	0.0011 U	0.0055 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	0.0065 U	13 U	0.65 U	6.5 U	--
JS-MW7A	JS-MW7A-3-4	09/12/13	Exploration	3 - 4	Present	--	--	--	--	0.00083 U	0.0041 U	0.00083 U	0.0017 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	ND	0.00083 U	--	--	--	--	--
JS-MW7A	JS-MW7A-5-6	09/12/13	Exploration	5 - 6	Present	--	--	--	--	0.00091 U	0.0046 U	0.00091 U	0.0018 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	ND	0.00091 U	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
1997 Agreed Order Remedial Action - 1742 Jefferson																									
JSP-CS-A BASE	CS-A BASE-5	08/29/12	Confirmation	5 - 5	Present	--	4.4 U	28 U	56 U	0.00079 U	0.0039 U	0.00079 U	0.0016 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	ND	0.00079 U	0.0057 U	--	--	5.6 U	--
JSP-CS-AS	CS-AS-2.5	08/29/12	Confirmation	2.5 - 2.5	Present	--	5.4 U	28 U	56 U	0.00093 U	0.0046 U	0.00093 U	0.0019 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	ND	0.00093 U	0.0057 U	--	--	5.6 U	--
JSP-CS-AW	CS-AW-2.5	08/29/12	Confirmation	2.5 - 2.5	Present	--	5.4 U	28 U	56 U	**0.00099**	**0.0049**	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	ND	0.00085 U	0.0057 U	--	--	5.6 U	--
JSP-CS-TP6BASE	CS-TP6BASE-7.5	08/30/12	Confirmation	7.5 - 7.5	Present	--	4.9 U	30 U	59 U	0.00094 U	0.0047 U	0.00094 U	0.0019 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	**DET**	**0.027**	0.0060 U	--	--	5.9 U	--
JSP-CS-TP6N	CS-TP6N-4	08/30/12	Confirmation	4 - 4	Present	--	5.0 U	28 U	55 U	0.00091 U	0.0045 U	0.00091 U	0.0018 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	ND	0.00091 U	0.0055 U	--	--	5.5 U	--
JSP-CS-TP6NE	CS-TP6NE-5.5	08/31/12	Confirmation	5.5 - 5.5	Present	--	8.4 U	**1,500**	**1,400**	*0.042 U*	0.21 U	0.042 U	0.084 U	0.042 U	0.042 U	0.042 U	*0.042 U*	0.042 U	0.042 U	ND	**0.060**	0.028 U	--	--	5.6 U	--
JSP-CS-TP6NW	CS-TP6NW-4	08/30/12	Confirmation	4 - 4	Present	--	5.0 U	28 U	57 U	0.00086 U	0.0043 U	0.00086 U	0.0017 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	ND	0.00086 U	0.0057 U	--	--	5.7 U	--
JSP-CS-TP6S	CS-TP6S-4	08/31/12	Confirmation	4 - 4	Present	--	5.0 U	28 U	56 U	0.00085 U	0.0042 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	ND	0.00085 U	0.0056 U	--	--	5.6 U	--
JSP-CS-TP6SE	CS-TP6SE-5	08/30/12	Confirmation	5 - 5	Present	--	4.5 U	28 U	56 U	0.00073 U	0.0036 U	0.00073 U	0.0015 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	ND	0.00073 U	0.0057 U	--	--	5.6 U	--
JSP-CS-TP6SW	CS-TP6SW-4	08/30/12	Confirmation	4 - 4	Present	--	5.2 U	29 U	58 U	0.00087 U	0.0043 U	0.00087 U	0.0017 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	**DET**	0.00087 U	0.0058 U	--	--	5.8 U	--
JSP-TP6-PCS	TP6-4 PCS	08/30/12	Confirmation	4 - 4	Removed	--	4.6 U	**1,400**	**1,100**	*0.048 U*	0.24 U	0.048 U	0.096 U	0.048 U	0.048 U	0.048 U	*0.048 U*	0.048 U	0.048 U	ND	**0.12**	**0.027**	--	--	5.6 U	--
JSP-CS-TP7BASE	CS-TP7BASE-2.0	09/04/12	Confirmation	2 - 2	Present	--	4.9 U	--	--	*0.020 U*	0.049 U	0.049 U	0.049 U	--	--	--	--	--	--	--	--	--	--	--	5.7 U	--
JSP-CS-B1BASE	CS-B1BASE-10.0	09/04/12	Confirmation	10 - 10	Present	--	7.7 U	--	--	*0.020 U*	0.077 U	0.077 U	0.077 U	--	--	--	--	--	--	--	--	--	--	--	6.3 U	--
JSP-CS-B1S	CS-B1S-6.0	09/04/12	Confirmation	6 - 6	Present	--	12 U	--	--	*0.024 U*	0.12 U	0.12 U	0.12 U	--	--	--	--	--	--	--	--	--	--	--	5.6 U	--
JSP-CS-B1SE	CS-B1SE-6.0	09/04/12	Confirmation	6 - 6	Present	--	**110**	--	--	**0.059**	0.11 U	**0.43**	**0.42**	--	--	--	--	--	--	--	--	--	--	--	**16**	--
JSP-CS-B1SW	CS-B1SW-8.0	09/04/12	Confirmation	8 - 8	Present	--	6.2 U	--	--	*0.020 U*	0.062 U	0.062 U	0.062 U	--	--	--	--	--	--	--	--	--	--	--	5.9 U	--
JSP-CS-B2BASE	CS-B2BASE-12.0	09/04/12	Confirmation	12 - 12	Present	--	6.9 U	--	--	*0.020 U*	0.069 U	0.069 U	0.069 U	--	--	--	--	--	--	--	--	--	--	--	6.1 U	--
JSP-CS-B2N	CS-B2N-5.5	09/04/12	Confirmation	5.5 - 5.5	Present	--	6.3 U	--	--	*0.020 U*	0.063 U	0.063 U	0.063 U	--	--	--	--	--	--	--	--	--	--	--	5.7 U	--
JSP-CS-B2NW	CS-B2NW-10.0	09/04/12	Confirmation	10 - 10	Present	--	5.9 U	--	--	*0.020 U*	0.059 U	0.059 U	0.059 U	--	--	--	--	--	--	--	--	--	--	--	5.8 U	--
JSP-CS-BNE	CS-BNE-7	08/29/12	Confirmation	7 - 7	Present	--	**16**	--	--	*0.020 U*	0.053 U	0.053 U	**0.071**	--	--	--	--	--	--	--	--	--	--	--	**8.9**	--
JSP-CS-TP8	CS-TP8-2.0	09/06/12	Confirmation	2 - 2	Present	--	5.9 U	--	--	*0.020 U*	0.059 U	0.059 U	0.059 U	--	--	--	--	--	--	--	--	--	--	--	**26**	--
JSP-TP5-2 NE	TP5-2 NE	08/28/12	Confirmation	2 - 2	Present	--	4.8 U	--	--	*0.020 U*	0.048 U	0.048 U	0.048 U	--	--	--	--	--	--	--	--	--	--	--	**28**	--
JSP-TP5-BOTTOM	TP5-8.5 BOTTOM	08/28/12	Confirmation	8.5 - 8.5	Present	--	5.3 U	--	--	*0.020 U*	0.053 U	0.053 U	0.053 U	--	--	--	--	--	--	--	--	--	--	--	5.7 U	--
2016 Agreed Order Investigation																										
A7-MW2S	A7-MW2S-10-11	11/11/16	Exploration	10 - 11	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	ND	--	--	--	--	--	--
A7-MW2S	A7-MW2S-15.5-16.5	11/11/16	Exploration	15.5 - 16.5	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	ND	--	--	--	--	--	--
A7-MW2S	A7-MW2S-17-18	11/11/16	Exploration	17 - 18	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	ND	--	--	--	--	--	--
A7-MW2S	A7-MW2S-24-25	11/11/16	Exploration	24 - 25	Present	--	--	--	--	--	--	--	--	--	--	0.0012 U	0.0012 U	--	--	ND	--	--	--	--	--	--
JS-MW1S	JS-MW1S-5-6	06/17/19	Exploration	5 - 6	Present	ND	--	--	--	0.00088 U	0.0044 U	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	**DET**	0.00088 U	0.0057 U	11 U	0.57 U	5.7 U	--
JS-MW1S	JS-MW1S-9-10	06/17/19	Exploration	9 - 10	Present	ND	--	--	--	0.00091 U	0.0046 U	0.00091 U	0.0018 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	**DET**	0.00091 U	0.0059 U	12 U	0.59 U	5.9 U	--
JS-MW1S	JS-MW1S-12-13	06/17/19	Exploration	12 - 13	Present	--	--	--	--	0.00093 U	0.0047 U	0.00093 U	0.0019 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	**DET**	0.00093 U	--	--	--	--	--
JS-MW1S	JS-MW1S-19-20	06/17/19	Exploration	19 - 20	Present	--	--	--	--	0.00097 U	0.0048 U	0.00097 U	0.0019 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	**DET**	0.00097 U	--	--	--	--	--
JS-MW1S	JS-MW1S-24-25	06/17/19	Exploration	24 - 25	Present	--	--	--	--	0.0011 U	0.0057 U	0.0011 U	0.0023 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	**DET**	0.0011 U	--	--	--	--	--
JS-MW1S	JS-MW1S-29-30	06/17/19	Exploration	29 - 30	Present	--	--	--	--	0.0011 U	0.0053 U	0.0011 U	0.0021 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	**DET**	0.0011 U	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 8-4 and 8-5. Location identification nomenclature was added to select wells as necessary (for example JSP- was added to JSP-CS-AS).

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical results is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

[4] Benzene may have been analyzed as full volatile organic compound (VOC) method and/or BTEX only. The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[5] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[6] Naphthalene may have been analyzed as a VOC, polycyclic aromatic hydrocarbon (PAH) and/or semi-volatile organic compound (SVOC). The lowest PQL or the greatest detected concentration is shown.

[7] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[8] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[9] Soil PCUL is based on the lowest value for protection of direct contact and groundwater as drinking water within the saturated zone and adjusted for PQL and Natural Background (see Tables 3-1 and 3-2).

[10] Soil screening level based on Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-6).

-- = not tested
1,2,4-TMB = 1,2,4-trimethylbenzene
1,3,5-TMB = 1,3,5-trimethylbenzene
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene and xylenes
CVOCs = chlorinated volatile organic compounds
DET = detected
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons
J = estimated value by laboratory
mg/kg = milligram per kilogram
MTBE = methyl tert-butyl ether
ND = not DET
NE = not established
TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil
TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification
U = analyte was ND at or greater than the listed reporting limit
Bold font type indicates that the analyte was DET at a concentration greater than the respective laboratory reporting limit.
Italic font type indicates the non-detect result is greater than the PCUL.
Gray text indicates that soil represented by the sample has been removed and that the sample result no longer represents current conditions.
Shading indicates that the DET concentration is greater than the PCUL.
Shading indicates that the DET concentration is greater than the screening level for vapor intrusion and/or the PCUL.

Table 8-5

Summary of Groundwater Chemical Analytical Results - 1742 Jefferson

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																					
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	cVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
1997 Agreed Order Investigation																												
JS-B2	JS-B2-5.5_19980824	08/24/98	Qvi	Temporary	n/a	n/a	--	--	250 U	500 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B5	JS-B5-5.3_19980824	08/24/98	Qvi	Temporary	n/a	n/a	--	--	**21,000**	**13,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B6	JS-B6-5.3_19980824	08/24/98	Qvi	Temporary	n/a	n/a	--	--	250 U	500 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B8	JS-B8-3-6_19990326	03/26/99	Qvi	Temporary	n/a	n/a	--	**458**	**270**	500 U	0.700 U	0.500 U	1.40 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B9	JS-B9-3_19990326	03/26/99	Qvi	Temporary	n/a	n/a	--	**168**	**397**	500 U	0.500 U	**0.671**	**1.32**	**2.54**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-B10	JS-B10-6_19990325	03/25/99	Qvi	Temporary	n/a	n/a	--	**766**	--	--	**4.33**	**4.92**	**20**	**103**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-GW2	JS-GW2_20010329	03/29/01	Qva	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
JS-MW1	JS-MW1_19981026	10/26/98	Qva	Permanent	37.03	53.12	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW1	JS-MW1_19990111	01/11/99	Qva	Permanent	36.18	53.97	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW1	JS-MW1_19990419	04/19/99	Qva	Permanent	35.77	54.38	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW1	JS-MW1_19990908	09/08/99	Qva	Permanent	36.40	53.75	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
JS-MW2	JS-MW2_19981026	10/26/98	Qva	Permanent	36.87	53.46	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW2	JS-MW2_19990111	01/11/99	Qva	Permanent	36.43	53.90	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW2	JS-MW2_19990419	04/19/99	Qva	Permanent	35.90	54.43	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JS-MW2	JS-MW2_19990908	09/08/99	Qva	Permanent	36.70	53.63	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
JS-MW2	JS-MW2_20000405	04/05/00	Qva	Permanent	36.06	54.27	--	--	--	--	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
JS-MW2	JS-MW2_20000908	09/08/00	Qva	Permanent	38.12	52.21	--	--	--	--	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
JS-MW3	JS-MW3_20010403	04/03/01	Qva	Permanent	38.05	51.30	--	--	--	--	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
UG-MW3	UG-MW3_19981026	10/26/98	Qva	Permanent	n/a	n/a	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
UG-MW3	UG-MW3_19990419	04/19/99	Qva	Permanent	n/a	n/a	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
UG-MW3	UG-MW3_20000405	04/05/00	Qva	Permanent	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
UG-MW3	UG-MW3_20000908	09/08/00	Qva	Permanent	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	2.00 U	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
Supplemental Investigations Under the 1997 Agreed Order																												
JS-MW1	JS-MW1-130618	06/18/13	Qva	Permanent	34.64	55.37	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW2	DUPE-130618-W-01	06/18/13	Qva	Permanent	n/a	n/a	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW2	JS-MW2-130618	06/18/13	Qva	Permanent	34.76	55.41	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW3	JS-MW3-130625	06/25/13	Qva	Permanent	36.47	52.88	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.3 U	--	--	--	--	--	--
JS-MW3S	JS-MW3S-130913	09/13/13	Qvi	Permanent	n/a	n/a	--	100 U	**310**	430 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	0.10 U	0.00755 U	--	3.0 U	--	**2.0**	--
JS-MW3S	JS-MW3S-140122	01/22/14	Qvi	Permanent	n/a	n/a	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW7A	JS-MW7A-140122	01/22/14	Qvi	Permanent	n/a	n/a	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW3	UG-MW3-130618	06/18/13	Qva	Permanent	n/a	n/a	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
2016 Agreed Order Investigation																												
JS-MW1	JS-MW1-161215	12/15/16	Qva	Permanent	33.39	56.62	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
JS-MW1	JS-MW1-20190325	03/25/19	Qva	Permanent	33.74	56.27	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW1	JS-MW1-20190903	09/03/19	Qva	Permanent	35.01	55.00	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW1	JS-MW1-200312	03/12/20	Qva	Permanent	33.69	56.32	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW1	JS-MW1-200903	09/03/20	Qva	Permanent	34.81	55.20	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW1S	JS-MW1S-190906	09/06/19	Qvi	Permanent	20.69	69.32	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW1S	JS-MW1S-200311	03/11/20	Qvi	Permanent	18.82	71.19	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW1S	JS-MW1S-200903	09/03/20	Qvi	Permanent	20.20	69.81	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW2	JS-MW2-161215	12/15/16	Qva	Permanent	33.52	56.65	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
JS-MW2	JS-MW2-20190325	03/25/19	Qva	Permanent	33.92	56.25	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW2	JS-MW2-20190906	09/06/19	Qva	Permanent	35.15	55.02	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW2	JS-MW2-200317	03/17/20	Qva	Permanent	33.87	56.30	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW2	JS-MW2-200903	09/03/20	Qva	Permanent	34.95	55.22	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW3	JS-MW3-161215	12/15/16	Qva	Permanent	34.97	54.38	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
JS-MW3	JS-MW3-20190311	03/11/19	Qva	Permanent	35.66	53.10	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3	JS-MW3-190903	09/03/19	Qva	Permanent	36.91	51.85	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3	JS-MW3-200311	03/11/20	Qva	Permanent	35.62	53.14	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3	JS-MW3-200903	09/03/20	Qva	Permanent	36.82	51.94	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3S	JS-MW3S-161215	12/15/16	Qvi	Permanent	17.26	71.60	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
JS-MW3S	JS-MW3S-20190327	03/27/19	Qvi	Permanent	18.13	70.86	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
JS-MW3S	JS-MW3S-190903	09/03/19	Qvi	Permanent	19.98	68.99	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3S	JS-MW3S-200311	03/11/20	Qvi	Permanent	18.16	70.81	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3S	JS-MW3S-200903	09/03/20	Qvi	Permanent	19.48	69.49	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW7A	JS-MW7A-161214	12/14/16	Qvi	Permanent	4.95	92.05	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
JS-MW7A	JS-MW7A-20190311	03/11/19	Qvi	Permanent	4.43	92.32	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																				
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
JS-MW7A	JS-MW7A-20190905	09/05/19	Qvi	Permanent	6.35	90.40	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
JS-MW7A	JS-MW7A-200309	03/09/20	Qvi	Permanent	4.27	92.48	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW7A	JS-MW7A-200903	09/03/20	Qvi	Permanent	6.49	90.26	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW3	UG-MW3-161213	12/13/16	Qva	Permanent	42.90	57.38	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
UG-MW3	UG-MW3-20190311	03/11/19	Qva	Permanent	43.22	56.41	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
UG-MW3	UG-MW3-20190905	09/05/19	Qva	Permanent	44.41	55.22	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW3	UG-MW3-200313	03/13/20	Qva	Permanent	43.00	56.63	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW3	UG-MW3-200903	09/03/20	Qva	Permanent	44.24	55.39	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
Tacoma Paper and Stationery Building Capital Project																											
JS-MW3	JS-MW3-141027	10/27/14	Qva	Permanent	n/a	n/a	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
JS-MW3S	JS-MW3S-141027	10/27/14	Qvi	Permanent	n/a	n/a	--	--	260 U	410 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 8-4 and 8-5. Location identification nomenclature was added to select wells as necessary (for example JSP- was added to JSP-CS-AS).

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical results is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 1,000 µg/L.

[4] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[5] Naphthalene may have been analyzed as a volatile organic compound (VOC), polycyclic aromatic hydrocarbon (PAH) and/or semi-volatile organic compound (SVOC). The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

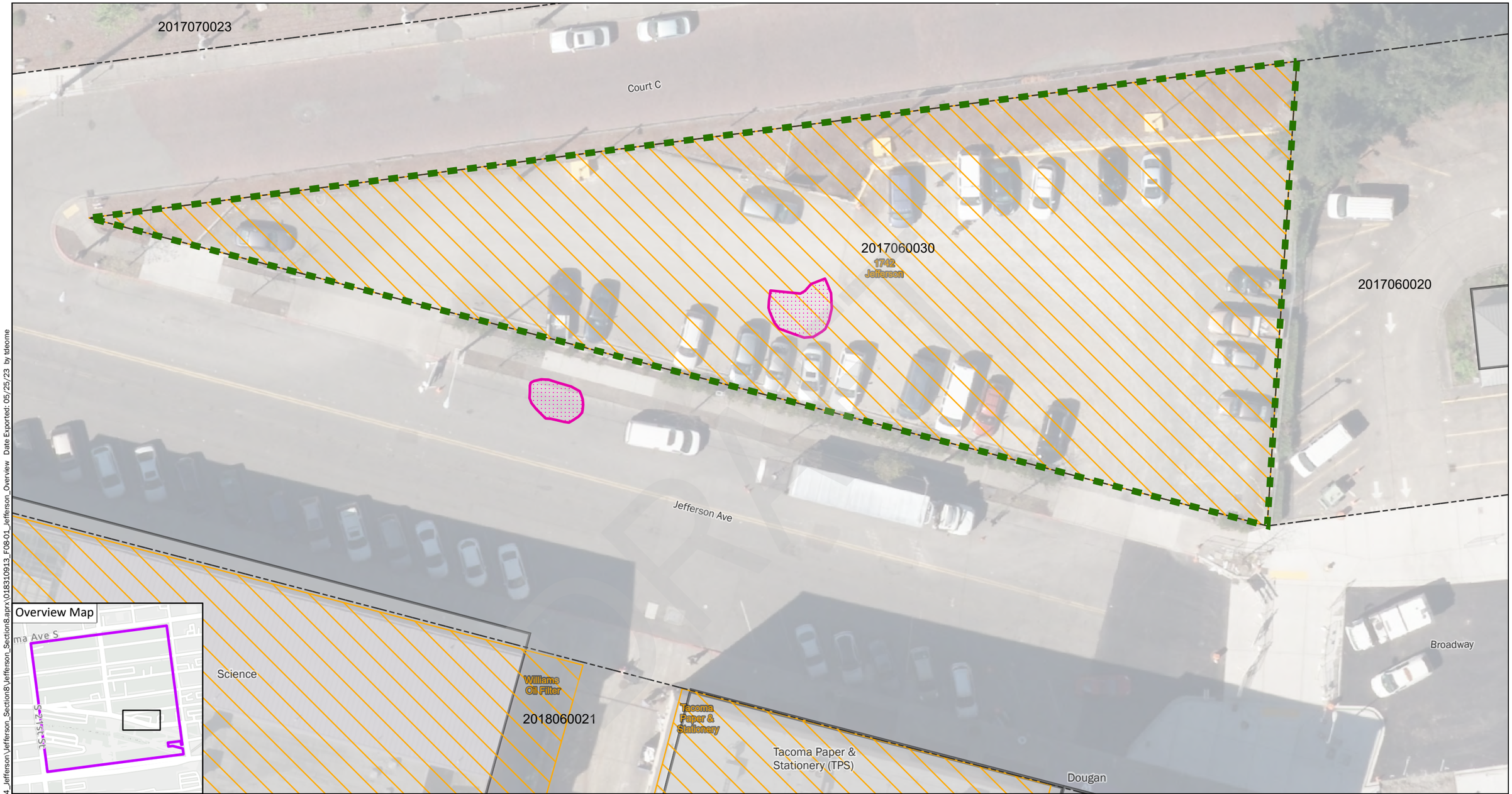
[6] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[7] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[8] Groundwater PCUL is based on the lowest value for protection of groundwater as drinking water adjusted for PQL (see Table 3-3).

[9] Groundwater screening level referenced from Ecology's CLARC (Cleanup Levels and Risk Calculation) Table (Excel) dated January 2023 and Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-5 and 3-6).

n/a = not available
-- = not tested
µg/L = microgram per liter
1,2,4-TMB = 1,2,4-trimethylbenzene
1,3,5-TMB = 1,3,5-trimethylbenzene
BTEX = benzene, toluene, ethylbenzene and xylenes
CVOCs = chlorinated volatile organic compounds
DET = detected
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons
J = estimated value by laboratory
MTBE = methyl tert-butyl ether
Qva = Vashon advance outwash
Qvi = Vashon ice-contact deposits
TOC = top of casing
TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil
TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification
U = Analyte was not DET at or greater than the listed reporting limit
Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.
Italic font type indicates the non-detect result is greater than the PCUL.
Shading indicates that the detected concentration is greater than the PCUL.
Shading indicates that the detected concentration is greater than the screening level for vapor intrusion and/or the PCUL.



P:\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\018310913_F08-01_Jefferson_Overview Date Exported: 05/25/23 by tdeome

Notes:
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.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- 1742 Jefferson Area of Concern
- Other Identified Property-Specific Area of Concern
- 1742 Jefferson Site - Area of Soil and/or Groundwater with One or More Contaminants of Concern Exceeding the Proposed Cleanup Level (PCUL)
- Parcel Boundary and Number
- Existing Building Footprint

W N S E

0 25

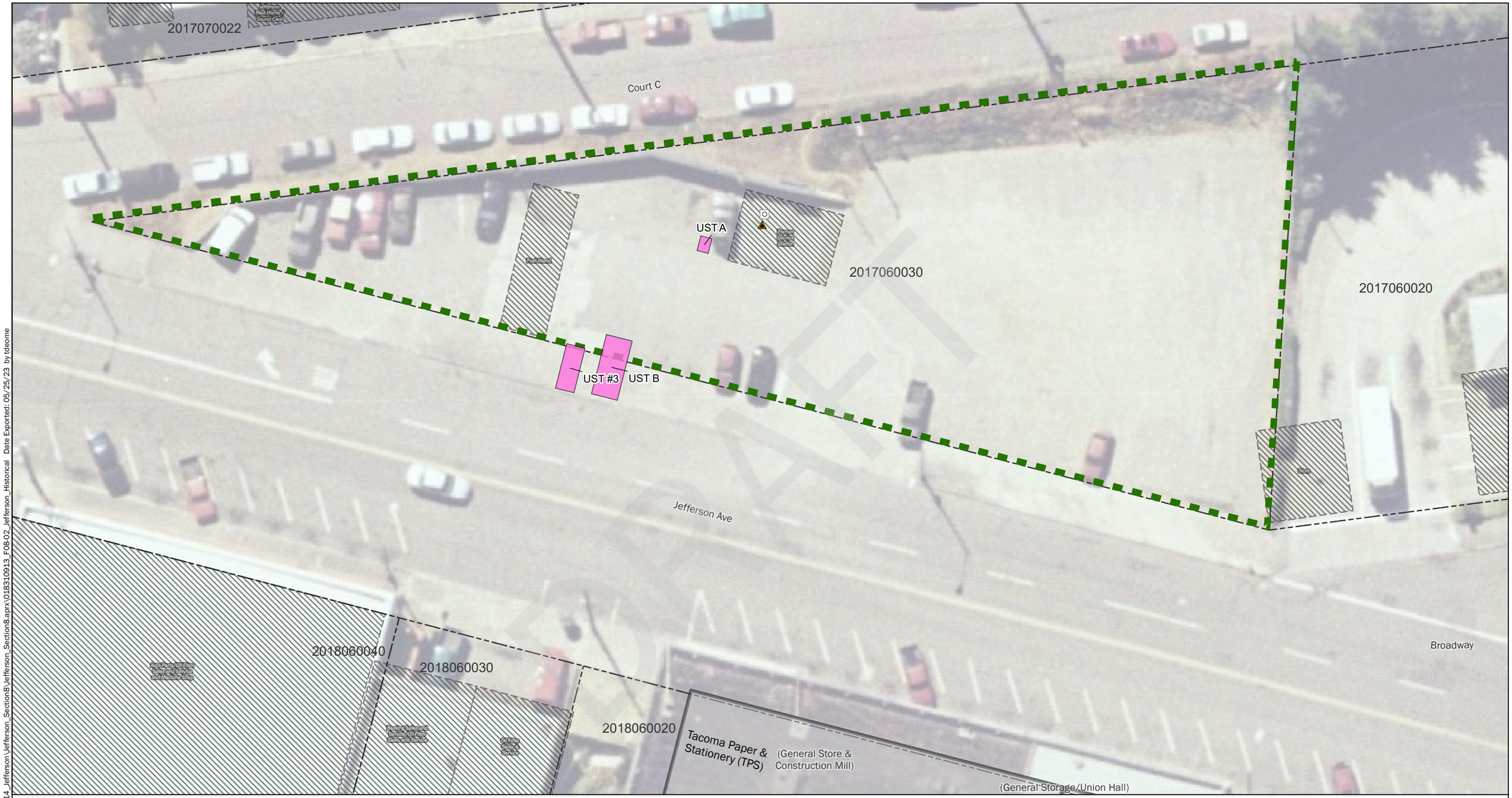
Feet

Overview
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-1



P:\0\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\0183109013_F08-02_Jefferson_Historical Date Exported: 05/25/23 by tdeome

Notes:

UST = underground storage tank

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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- 1742 Jefferson Area of Concern
- Parcel Boundary and Number (Historic)
- Historic Building Footprint/Feature
- Former UST Location
- Hydraulic Lift
- Sump
- Existing Building Footprint (with Former Operations)

W S N E

0 25

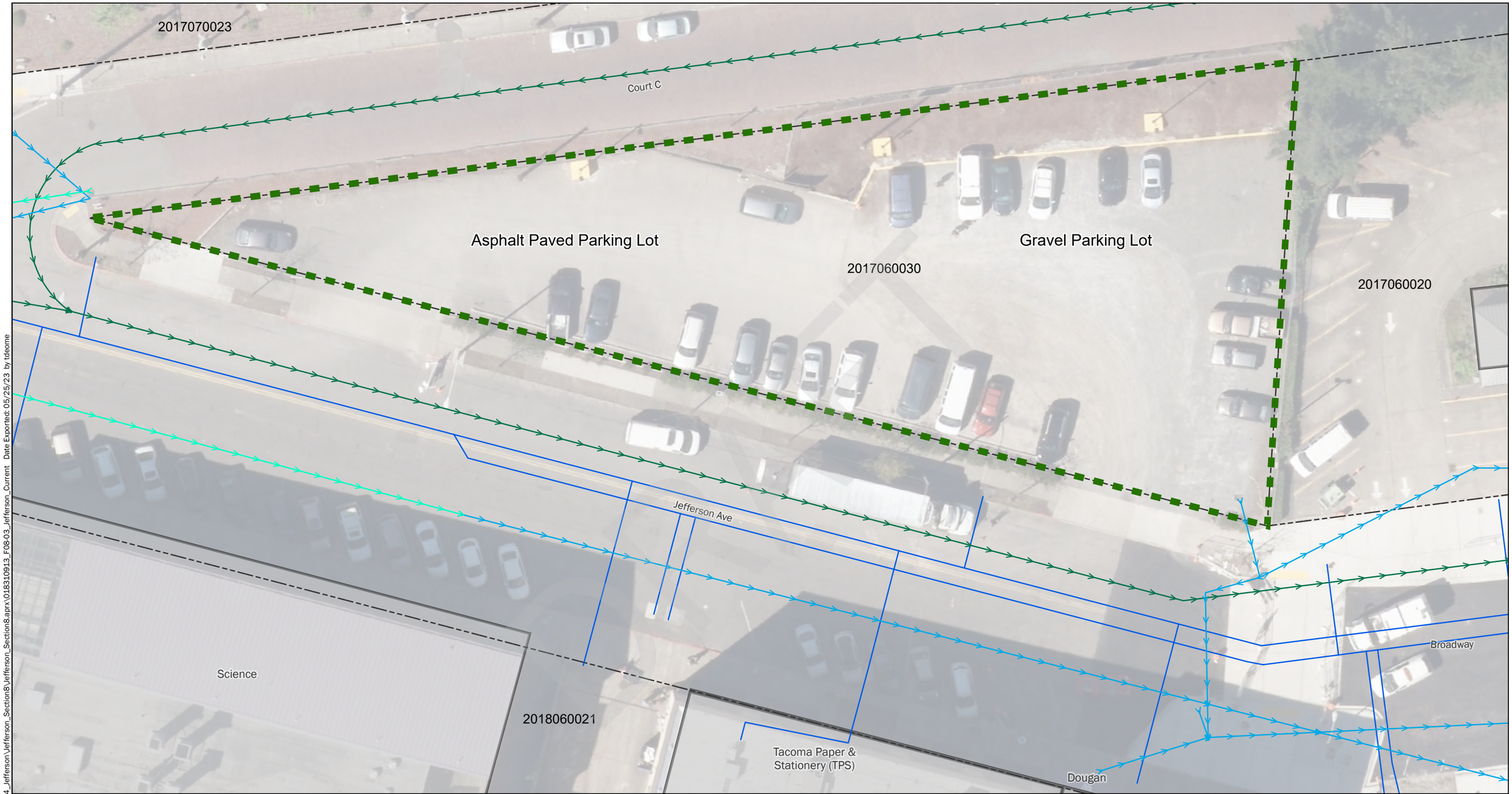
Feet

Historic Features
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-2



P:\0\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\018310913_F08-03_Jefferson_Current Date Exported: 05/25/23 by tdeome

Notes:

AOC = Area of Concern

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- Water Utility
- 1742 Jefferson Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint

W N S E

0 25

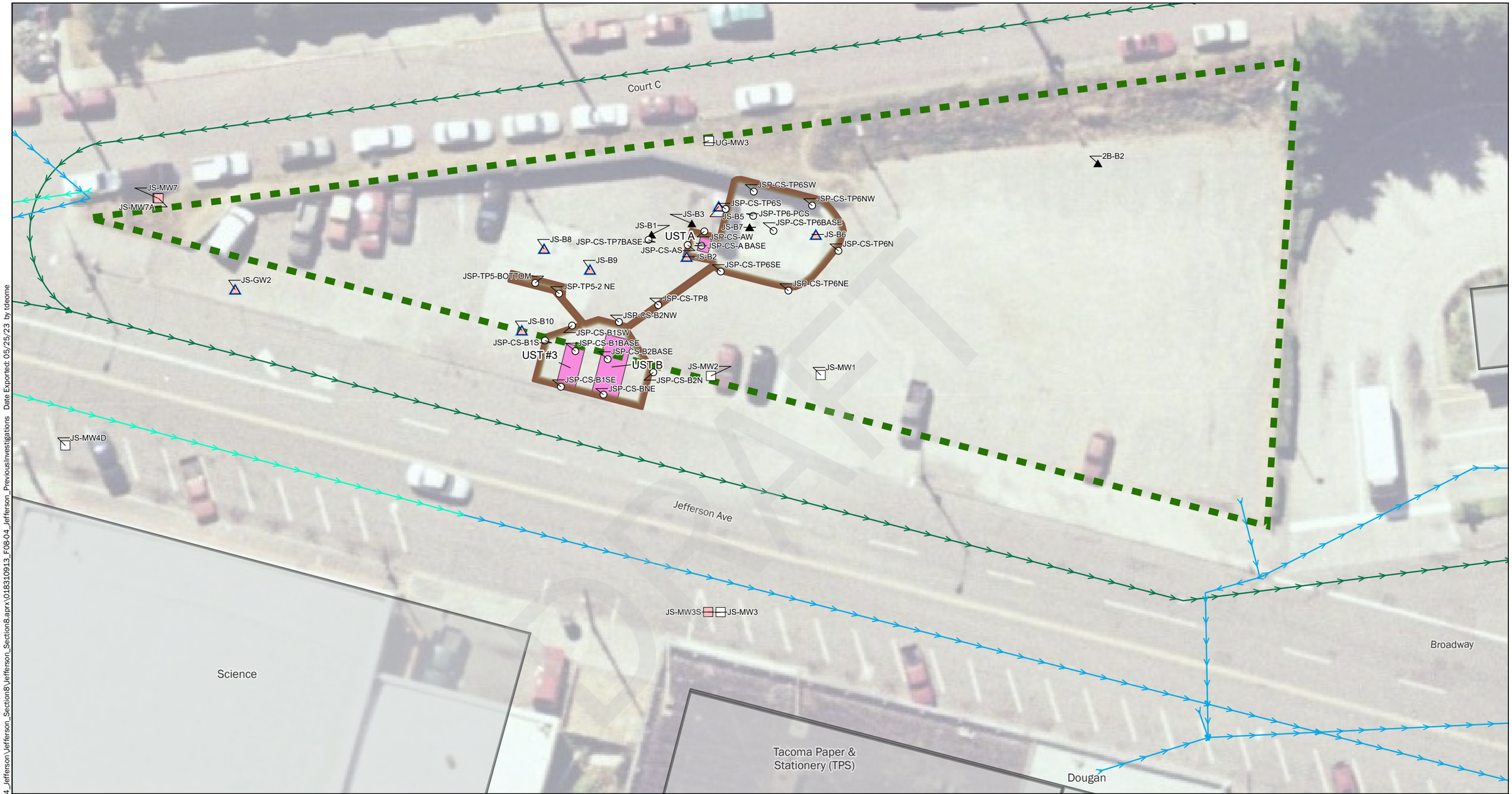
Feet

Current Features and Utility Infrastructure
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-3



P:\0\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\0183109913_F08-04_Jefferson_PreviousInvestigations Date Exported: 05/25/23 by tdeome

Notes:

UST = underground storage tank

1. JS-B1 is Mapped Based on URS 2002 Remedial Investigation Report but presumed to be located further north and adjacent to the UST.
2. JS-B5 is Mapped Based on URS 2002 Remedial Investigation Report but presumed to be located further north and within the remedial excavation.
3. The locations of all features shown are approximate.
4. 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.
5. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Former UST Location
- Approximate Lateral Extent of Remedial Excavation

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Data Source: Aerial provided by City of Tacoma, 1998

0 25 Feet

Previous Investigations and Remedial Actions
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-4

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- 1742 Jefferson Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint

W E S N

0 25

Feet

2016 Agreed Order Remedial Investigation Locations
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-5

P:\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\0183109913_F08-05_Jefferson_2016AORemedialInvestigations Date Exported: 05/25/23 by tdeome

Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 30 milligram per kilogram (mg/kg) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- Cross Section
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation

N

0 25

Feet

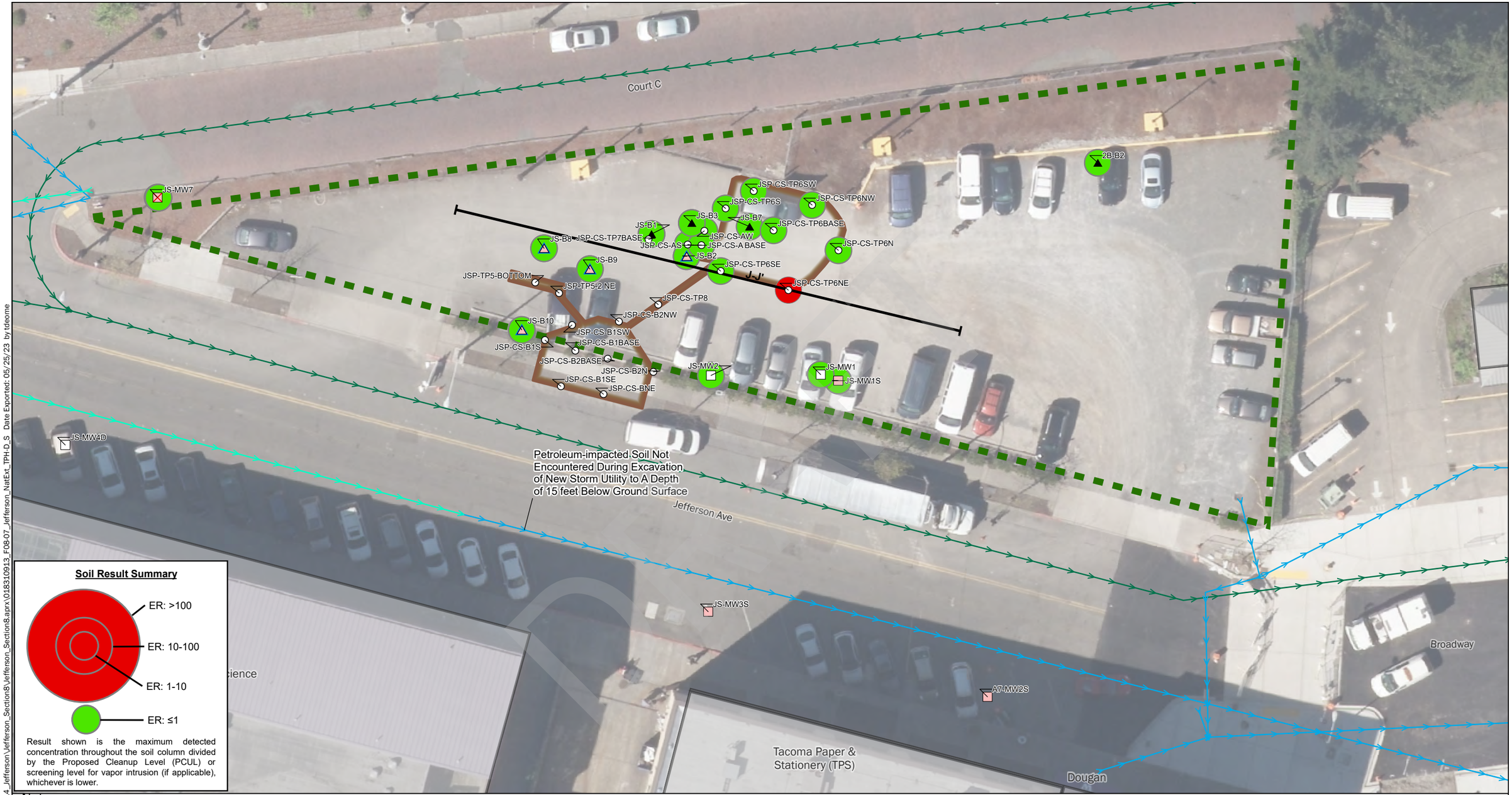
Summary of TPH-G in Soil
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-6

P:\0 \0183109\ GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\0183109913_F08-06_Jefferson_NatExt_TPH-G_S Date Exported: 05/25/23 by tdeome



Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening 250 milligram per kilogram (mg/kg) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation

0 25
Feet

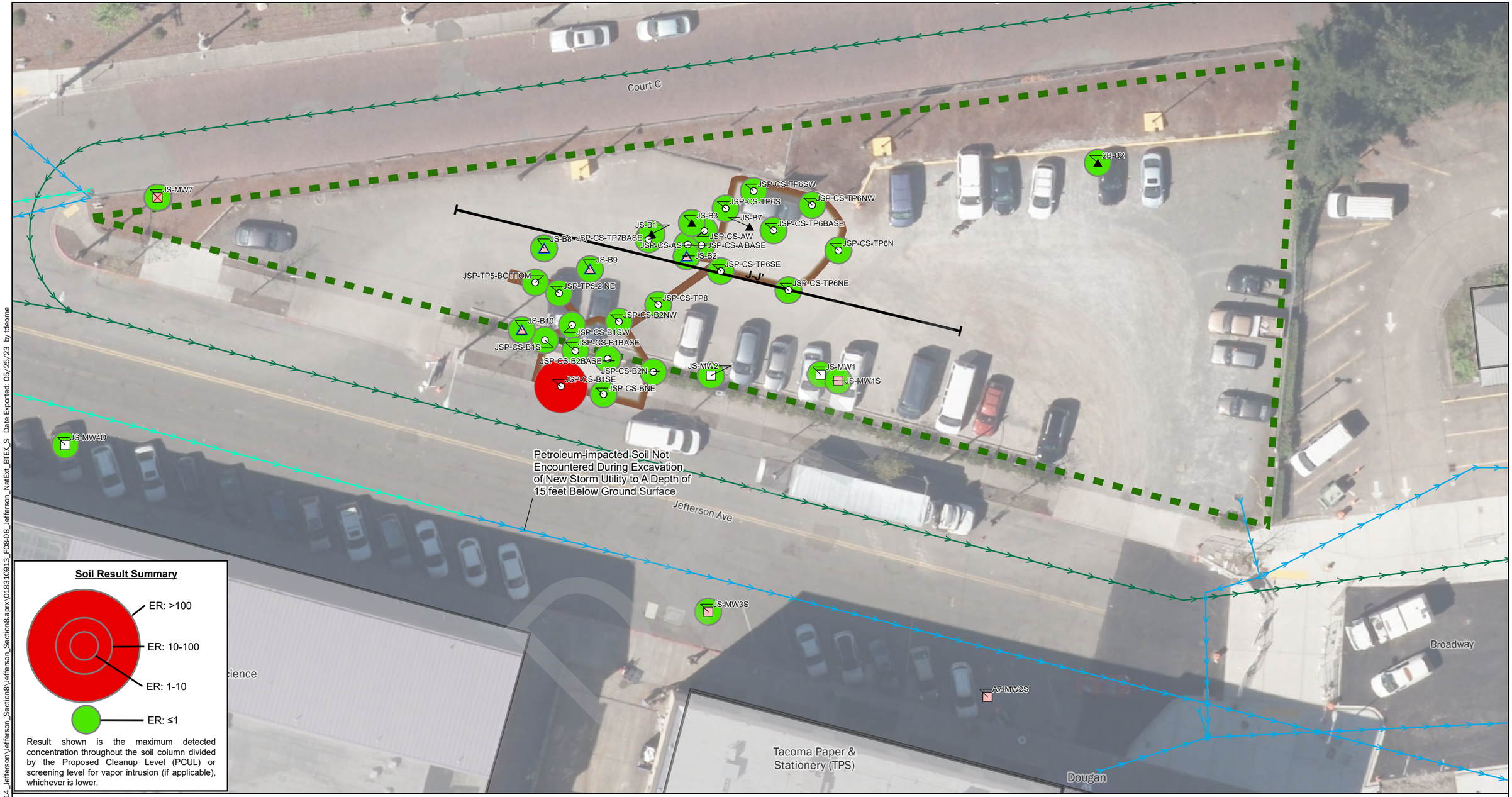
Summary of TPH-D in Soil
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-7

P:\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\0183109913_F08-07_Jefferson_NatExt_TPH-D_S Date Exported: 05/25/23 by tdeome



Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

BTEX= Benzene, Ethylbenzene, Toluene and Xylene, ER = Exceedance Ratio
Basis for Screening =(Benzene = 0.0017 mg/kg,
Ethylbenzene = 0.34 mg/kg, Toluene = 0.27 mg/kg and
Total Xylene = 0.83 mg/kg), mg/kg = milligrams per kilogram - See Section Tables

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- Cross Section
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W E S N

0 25

Feet

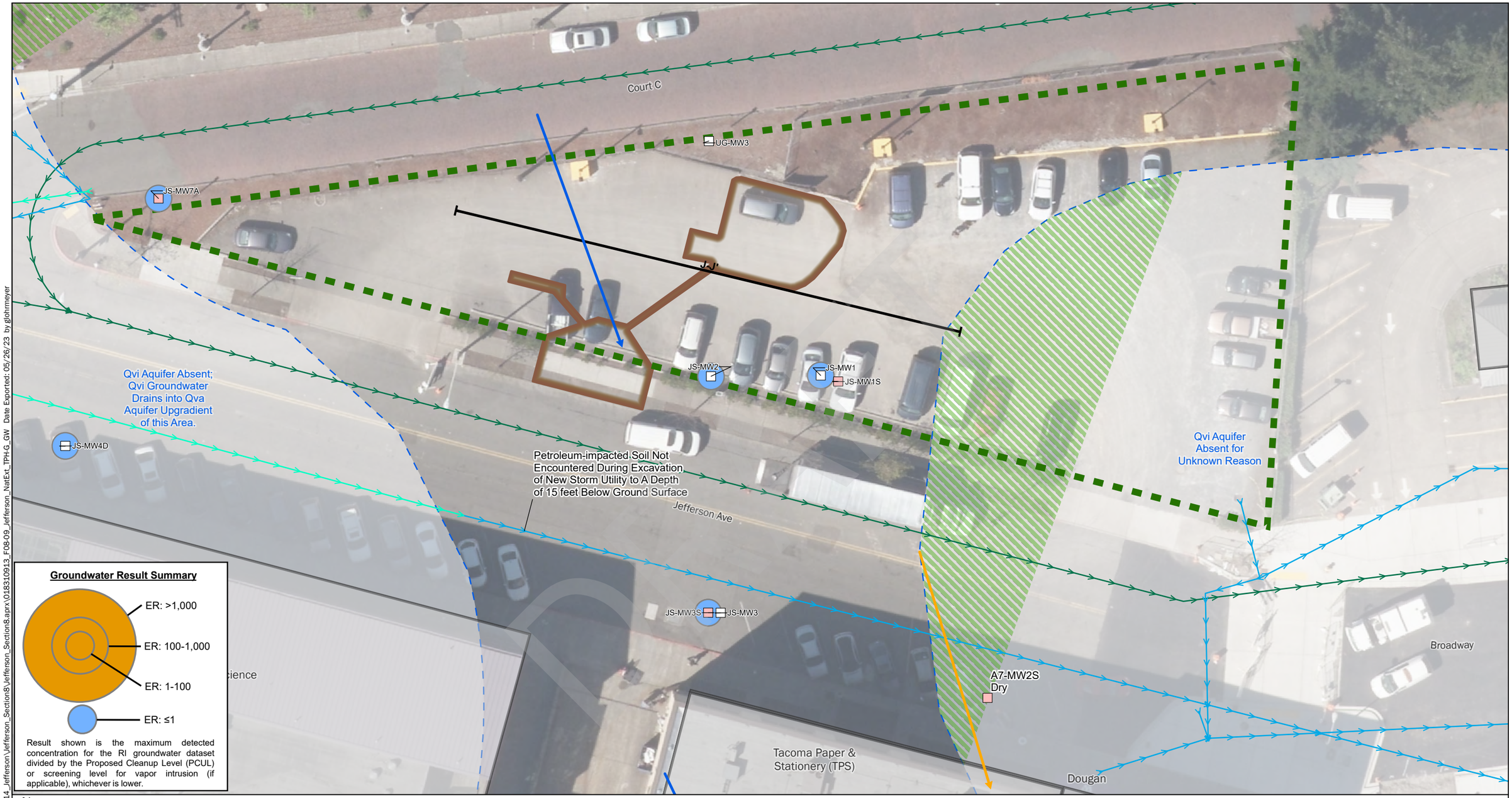
Summary of BTEX in Soil
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-8

P:\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\0183109913_F08-08_Jefferson_NatExt_BTEX_S Date Exported: 05/25/23 by tdeome



Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 800 micrograms per liter (µg/L) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- Cross Section
- Qvi Aquifer Groundwater Flow Direction
- Qva Aquifer Groundwater Flow Direction
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development
- Areas where Qvi Aquifer is Absent

N

0 25

Feet

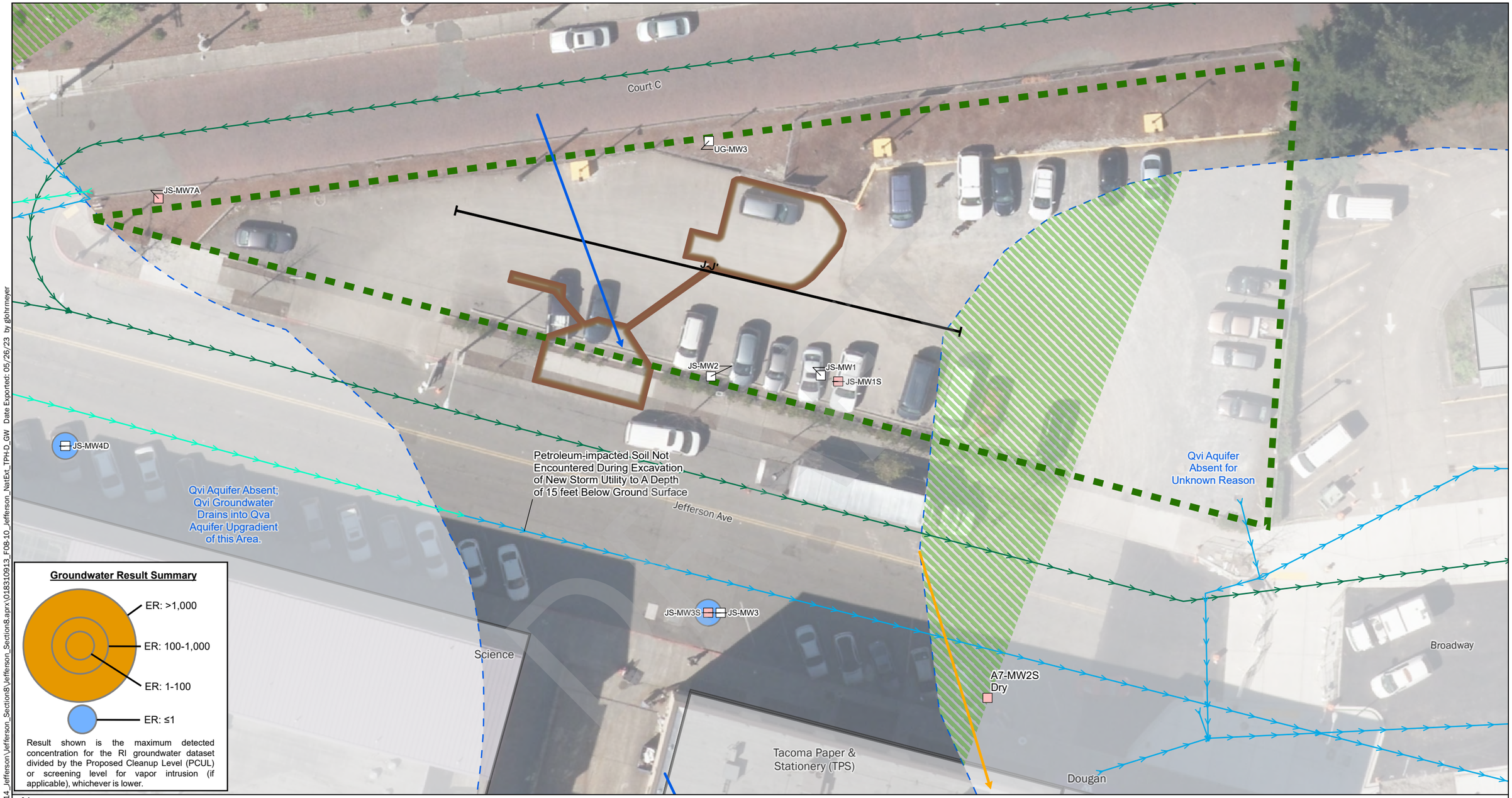
Summary of TPH-G in the Qvi/Qva Aquifer
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-9

P:\0\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\018310913_F08-09_Jefferson_NatExt_TPH-G_GW Date Exported: 05/26/23 by glohrmeyer



Groundwater Result Summary

ER: >1,000

ER: 100-1,000

ER: 1-100

ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- Cross Section
- Qvi Aquifer Groundwater Flow Direction
- Qva Aquifer Groundwater Flow Direction
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

W, S, N, E

0 25

Feet

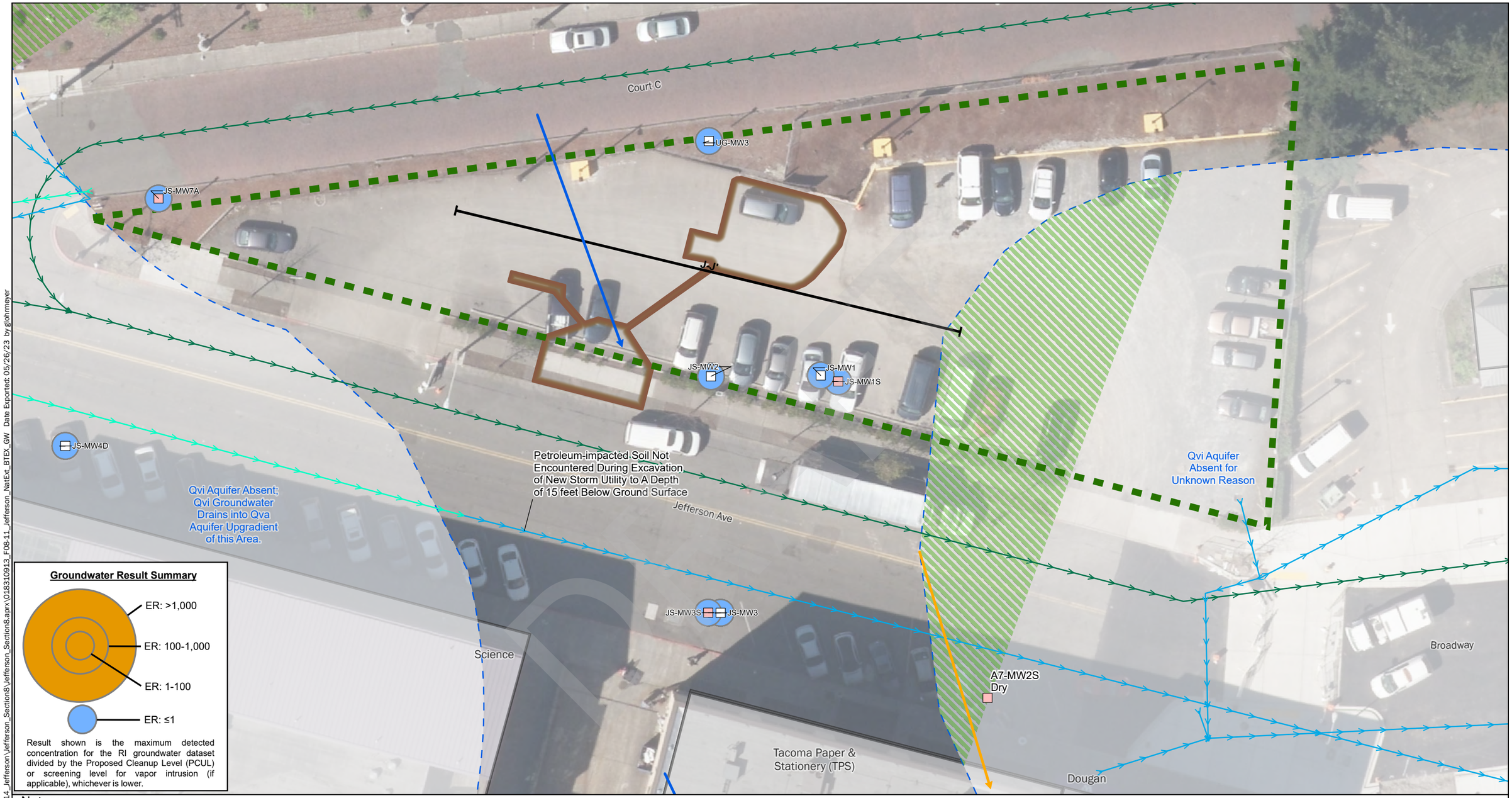
Summary of TPH-D in the Qvi/Qva Aquifer
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-10

P:\0\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\018310913_F08-10_Jefferson_NatExt_TPH-D_GW Date Exported: 05/26/23 by glohrmeyer



Groundwater Result Summary

ER: >1,000

ER: 100-1,000

ER: 1-100

ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Notes:

BTEX= Benzene, Ethylbenzene, Toluene and Total Xylenes, ER = Exceedance Ratio
Basis for Screening = Benzene(5 ug/L), Ethylbenzene(700 ug/L), Toluene(640 ug/L), Total Xylenes(1600 ug/L) µg/L = microgram per liter - See Section Tables

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial provided by City of Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021
- Cross Section
- Qvi Aquifer Groundwater Flow Direction
- Qva Aquifer Groundwater Flow Direction
- 1742 Jefferson Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Areas where Qvi Aquifer is Absent
- Areas where Qvi and Qva Aquifers are Connected by Glacial Incision or Development

N, W, S, E

0 25

Feet

Summary of BTEX in the Qvi/Qva Aquifer
1742 Jefferson

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-11

P:\0\0183109\GIS\MXDs\RI_working\Section14_Jefferson\Jefferson_Section8\Jefferson_Section8.aprx\018310913_F08-11_Jefferson_NatExt_BTEX_GW Date Exported: 05/26/23 by glohrmeyer

J
(South)

J'
(North)

Former Hoist and Floor Drain
2012 Remedial Excavation
4-inch Sanitary Sewer Pipe Capped During Excavation. Extent of Pipe not Known but Anticipated to Extend Toward Jefferson Avenue as Shown
Former Waste Oil UST

JSP-B8 (5' E)
JSP-B9 (8' E)
JSP-B2 (1' W)
JS-MW2 (27' E)
JS-MW1 (22' E)
JS-MW1S (22' E)

CS-AS-2.5
CS-A BASE-5
CS-TP6SE
CS-TP6NE
CS-TP6 BASE-7.5

Qf
Qvi Till-Like
Qvi Channel
Qvi Silt
Qva Sand/Gravel
Qva Silt

Qvi Aquifer Enters Qva Sand/Gravel

Elevation (Feet)
100
90
80
70
60
50
40

Distance (Feet)
30
40
50
60
70
80
90
100
110
120
130
140
150

Legend

UG-MW31 (Offset 91' N) — Borehole Number (Offset Distance and Direction)
Qvi Aquifer Water Level (April 2021)
Qva Aquifer Water Level (April 2021)
Qvi Aquifer Well Screen
Qva Aquifer Well Screen
Inferred Soil Contact Line
Contact Between Qvi and Qva Units
Existing Ground Surface
Former Source: Service Station
Qvi Aquifer Groundwater Surface (March 2020)
Qva Aquifer Potentiometric Groundwater Surface (April 2021)
Approximate Extent of Petroleum-Related Contaminated Soil
Confirmation Soil Sample

Stratigraphic Units

Recent Deposits (Qf)
Fill (Qf)

Ice-Contact Deposits (Qvi)
Silty Gravel with Sand (Qvi Till-Like Deposits)
Oxidized Sand and Gravel (Qvi Channel Deposits)
Silt and Silty Gravel (Qvi Silt Deposits)

Advance Outwash Deposits (Qva)
Silt to Sandy Silt (Qva Silt Deposits)
Sand and Gravel (Qva Sand and Gravel Deposits)

Notes

1. Qvi = Ice-Contact Deposits
   Qva = Advance Outwash Deposits
   TPH = Total Petroleum Hydrocarbons
   RISSL = Remedial Investigation Soil Screening Level
   UST = Underground Storage Tank
2. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.

Datum: NGVD29

10 0 10
Vertical Scale in Feet
Horizontal = Vertical

Summary of Petroleum-Related Contamination in Soil Cross Section J-J'

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 8-12

Table 9-1

Soil Investigation Summary - Derville

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]														
							Petroleum Hydrocarbons				VOCs										
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
Supplemental Investigations Under the 1997 Agreed Order																					
1B-TP1	06/24/13	GeoEngineers	Exploration	Test Pit	203	4	X		X	X	X	X	X	X	X		X				
1B-TP2	06/24/13	GeoEngineers	Exploration	Test Pit	195	8	X		X	X	X	X	X	X	X		X				
1B-TP3	06/24/13	GeoEngineers	Exploration	Test Pit	205	4.5	X		X	X	X	X	X	X	X		X				
UG-MW24	06/27/13	GeoEngineers	Exploration	Sonic	197.08	100		X	X	X	X	X	X	X	X		X				
UG-MW37	09/19/13	GeoEngineers	Exploration	Sonic	197.78	14	X		X	X	X	X	X	X	X		X				
2016 Agreed Order Investigation																					
A8-MW2S	04/17/19	GeoEngineers	Exploration	Sonic	194.87	25	X	X	X	X	X	X	X	X	X		X				
A8-MW3S	04/17/19	GeoEngineers	Exploration	Sonic	197.01	20	X	X	X	X	X	X	X	X	X		X				
UG-MW24S	04/18/19	GeoEngineers	Exploration	Sonic	197.20	20	X		X	X	X	X	X	X	X	X	X				
UG-MW37RD	04/17/19	GeoEngineers	Exploration	Sonic	202.24	45	X				X	X	X	X	X	X	X				
UG-MW37RR	10/25/19	GeoEngineers	Exploration	Sonic	197.79	20			X	X	X	X	X	X							

Notes:

[1] Sample locations are shown on Figures 9-4 and 9-5.

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Derville are summarized in Table 9-4. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

VOCs = volatile organic compounds

Table 9-2

Groundwater Investigation Summary - Derville

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
Supplemental Investigations Under the 1997 Agreed Order																	
UG-MW24	07/15/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X		X		X	
UG-MW37	09/30/13	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X		X		X	
2016 Agreed Order Investigation																	
A8-MW2S	05/15/19	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X		X	X		
A8-MW2S	09/18/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
A8-MW2S	03/12/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X	X				
A8-MW2S	09/15/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X	X				
A8-MW3S	05/15/19	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X		X	X		
A8-MW3S	09/18/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
A8-MW3S	03/12/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
A8-MW3S	09/15/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
UG-MW24	12/05/16	GeoEngineers	Permanent	Qva			X	X		X	X	X					
UG-MW24	10/03/18	GeoEngineers	Permanent	Qva			X	X		X	X	X					
UG-MW24	03/07/19	GeoEngineers	Permanent	Qva			X	X		X	X	X					
UG-MW24	09/18/19	GeoEngineers	Permanent	Qva			X	X	X	X	X	X					
UG-MW24	03/12/20	GeoEngineers	Permanent	Qva			X	X	X	X	X	X	X				
UG-MW24	09/15/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X	X				
UG-MW24S	05/16/19	GeoEngineers	Permanent	Qvi			X	X	X	X	X	X		X	X		
UG-MW24S	09/18/19	GeoEngineers	Permanent	Qvi			X	X	X	X	X	X					
UG-MW24S	03/12/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X	X				
UG-MW24S	09/15/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X	X				
UG-MW37R	12/05/16	GeoEngineers	Permanent	Qvi			X	X		X	X	X					
UG-MW37R	10/03/18	GeoEngineers	Permanent	Qvi			X	X		X	X	X					
UG-MW37R	03/07/19	GeoEngineers	Permanent	Qvi			X	X		X	X	X					
UG-MW37R	09/18/19	GeoEngineers	Permanent	Qvi			X	X	X	X	X	X					
UG-MW37R	03/12/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
UG-MW37R	09/15/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
UG-MW37RD	05/15/19	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X		X	X		
UG-MW37RD	09/18/19	GeoEngineers	Permanent	Qva			X	X	X	X	X	X					
UG-MW37RD	03/12/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X	X				
UG-MW37RD	09/15/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X	X				
UG-MW37RR	11/01/19	GeoEngineers	Permanent	Qvi			X	X	X	X	X	X					
UG-MW37RR	03/12/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
UG-MW37RR	09/15/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					

Notes:

[1] Sample locations are shown on Figures 9-4 and 9-5.

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Derville are summarized in Table 9-5. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

VOCs = volatile organic compounds

Table 9-3

Well Construction Details - Derville

University of Washington - Tacoma Campus

Tacoma, Washington

Well Identification[1]	Well Construction Date	Installed By	Ground Surface Elevation[2] (feet NGVD29)	Top of Casing Elevation (feet NGVD29)[2]	Top of Well Screen (feet bgs)	Bottom of Well Screen (feet bgs)	Top of Well Screen Elevation (feet NGVD29)	Bottom of Well Screen Elevation (feet NGVD29)	Lithology Across Well Screen Interval	Well Status	Well Type
Supplemental Investigations Under the 1997 Agreed Order											
UG-MW24	06/27/13	GeoEngineers	197.08	196.80	65	80	132	117	Qva	Existing	Permanent
UG-MW37	09/19/13	GeoEngineers	197.78	197.29	6	14	191	183	Qvi	Decommissioned	Permanent
UG-MW37R	04/30/15	GeoEngineers	202.24	201.97	7	17	195	185	Qvi	Existing	Permanent
2016 Agreed Order Investigation											
A8-MW2S	04/17/19	GeoEngineers	194.87	194.43	20	25	174	169	Qvi	Existing	Permanent
A8-MW3S	04/17/19	GeoEngineers	197.01	196.56	15	20	182	177	Qvi	Existing	Permanent
UG-MW24S	04/18/19	GeoEngineers	197.20	196.75	6	16	191	181	Qvi	Existing	Permanent
UG-MW37RD	04/17/19	GeoEngineers	202.24	201.81	35	45	167	157	Qva	Existing	Permanent
UG-MW37RR	10/25/19	GeoEngineers	197.79	197.36	5	15	192	182	Qvi	Existing	Permanent

Notes:

[1] Well locations are shown on Figures 9-4 and 9-5.

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

bgs = below ground surface

NGVD29 = National Geodetic Vertical Datum of 1929

Qvi = Vashon ice-contact deposits

Qva = Vashon advance outwash

Table 9-4

Summary of Soil Chemical Analytical Results - Derville

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Supplemental Investigations Under the 1997 Agreed Order																										
1B-TP1	1B-TP1-0-1	06/24/13	Exploration	0 - 1	Present	**0**	--	28 U	**120**	0.0011 U	0.011 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	0.0057 U	11 U	0.56 U	**24**	--
1B-TP2	1B-TP2-0-1	06/24/13	Exploration	0 - 1	Present	**0**	--	**86 J**	**1,700**	0.00097 U	0.0097 U	0.00097 U	0.0019 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	ND	0.00097 U	**0.065**	11 U	0.56 U	**31**	--
1B-TP2	1B-TP2-2-3	06/24/13	Exploration	2 - 3	Present	**0**	--	**61 J**	**410**	*0.0018 U*	0.018 U	0.0018 U	0.0036 U	0.0018 U	0.0018 U	0.0018 U	*0.0018 U*	0.0018 U	0.0018 U	ND	**0.033**	**0.16**	**20**	**1.0**	350	--
1B-TP2	1B-TP2-5-6	06/24/13	Exploration	5 - 6	Present	ND	--	--	--	0.0011 U	0.011 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	0.0061 U	12 U	0.61 U	**7.4**	--
1B-TP2	1B-TP2-7-8	06/24/13	Exploration	7 - 8	Present	ND	--	--	--	0.00094 U	0.0094 U	0.00094 U	0.0019 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	ND	0.00094 U	0.0064 U	13 U	0.64 U	6.4 U	--
1B-TP3	1B-TP3-0-1	06/24/13	Exploration	0 - 1	Present	**D,0**	--	**45 J**	**620**	0.00098 U	0.0098 U	0.00098 U	0.0020 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	ND	0.00098 U	**0.069**	11 U	0.57 U	**41**	--
1B-TP3	1B-TP3-2-3	06/24/13	Exploration	2 - 3	Present	ND	--	--	--	0.0012 U	0.012 U	0.0012 U	0.0024 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	0.0012 U	0.0057 U	11 U	0.57 U	**5.8**	--
1B-TP3	1B-TP3-3-4	06/24/13	Exploration	3 - 4	Present	ND	--	--	--	0.00088 U	0.0088 U	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	ND	0.00088 U	0.0056 U	11 U	0.55 U	5.5 U	--
UG-MW24	UG-MW24-9-10	06/27/13	Exploration	9 - 10	Present	--	4.5 U	29 U	57 U	0.00077 U	0.0077 U	0.00077 U	0.0015 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	**DET**	0.00077 U	0.0057 U	11 U	0.57 U	5.7 U	--
UG-MW24	UG-MW24-12-13	06/27/13	Exploration	12 - 13	Present	--	4.0 U	28 U	56 U	0.00074 U	0.0074 U	0.00074 U	0.0015 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	**DET**	0.00074 U	0.0056 U	11 U	0.56 U	5.6 U	--
UG-MW24	UG-MW24-27-28	06/28/13	Exploration	27 - 28	Present	--	5.7 U	27 U	53 U	0.00086 U	0.0086 U	0.00086 U	0.0017 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	**DET**	0.00086 U	0.0054 U	11 U	0.53 U	5.3 U	--
UG-MW24	UG-MW24-40-41	06/28/13	Exploration	40 - 41	Present	--	6.0 U	31 U	62 U	0.0011 U	0.011 U	0.0011 U	0.0023 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	0.0063 U	12 U	0.62 U	6.2 U	--
UG-MW24	UG-MW24-54-55	06/28/13	Exploration	54 - 55	Present	--	5.8 U	29 U	59 U	0.00091 U	0.0091 U	0.00091 U	0.0018 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	ND	0.00091 U	0.0059 U	12 U	0.59 U	5.9 U	--
UG-MW24	UG-MW24-72-73	06/28/13	Exploration	72 - 73	Present	--	5.8 U	30 U	59 U	0.00092 U	0.0092 U	0.00092 U	0.0018 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	ND	**0.023**	0.0060 U	12 U	0.59 U	5.9 U	--
UG-MW24	UG-MW24-79-80	06/28/13	Exploration	79 - 80	Present	--	4.0 U	28 U	56 U	0.0010 U	0.010 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	0.0057 U	11 U	0.56 U	5.6 U	--
UG-MW24	UG-MW24-99-100	06/28/13	Exploration	99 - 100	Present	--	4.7 U	28 U	56 U	0.00097 U	0.0097 U	0.00097 U	0.0019 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	0.00097 U	ND	0.00097 U	0.0057 U	11 U	0.56 U	5.6 U	--
UG-MW37	UG-MW37-0-1	09/19/13	Exploration	0 - 1	Present	**0**	--	57 U	**520**	0.00078 U	0.0039 U	0.00078 U	0.0016 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	ND	0.00078 U	**0.030**	**12**	0.55 U	**12**	--
UG-MW37	UG-MW37-1-2	09/19/13	Exploration	1 - 2	Present	ND	--	--	--	0.00061 U	0.0030 U	0.00061 U	0.0012 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	ND	0.00061 U	0.0057 U	**14**	0.56 U	5.6 U	--
UG-MW37	UG-MW37-3-4	09/19/13	Exploration	3 - 4	Present	--	--	--	--	0.00059 U	0.0030 U	0.00059 U	0.0012 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	ND	0.00059 U	--	--	--	--	--
UG-MW37	UG-MW37-5.5-6.5	09/19/13	Exploration	5.5 - 6.5	Present	--	--	--	--	0.00054 U	0.0027 U	0.00054 U	0.0011 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	ND	0.00054 U	--	--	--	--	--
UG-MW37	UG-MW37-7-8	09/19/13	Exploration	7 - 8	Present	--	--	--	--	0.00059 U	0.0030 U	0.00059 U	0.0012 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	ND	0.00059 U	--	--	--	--	--
UG-MW37	S-130919-1	09/19/13	Exploration	9 - 10	Present	--	--	--	--	0.00053 U	0.0027 U	0.00053 U	0.0011 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	ND	0.00053 U	--	--	--	--	--
UG-MW37	UG-MW37-9-10	09/19/13	Exploration	9 - 10	Present	--	--	--	--	0.00056 U	0.0028 U	0.00056 U	0.0011 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	ND	0.00056 U	--	--	--	--	--
UG-MW37	UG-MW37-11-12	09/19/13	Exploration	11 - 12	Present	--	--	--	--	0.00055 U	0.0028 U	0.00055 U	0.0011 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	ND	0.00055 U	--	--	--	--	--
UG-MW37	UG-MW37-13-14	09/19/13	Exploration	13 - 14	Present	--	--	--	--	0.00059 U	0.0030 U	0.00059 U	0.0012 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	ND	0.00059 U	--	--	--	--	--
UG-MW37	UG-MW37-14-15	09/19/13	Exploration	14 - 15	Present	--	--	--	--	0.00058 U	0.0029 U	0.00058 U	0.0012 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	ND	0.00058 U	--	--	--	--	--
UG-MW37	UG-MW37-15-16	09/19/13	Exploration	15 - 16	Present	--	--	--	--	0.00075 U	0.0038 U	0.00075 U	0.0015 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	ND	0.00075 U	--	--	--	--	--
UG-MW37	UG-MW37-16-17	09/19/13	Exploration	16 - 17	Present	--	--	--	--	0.00055 U	0.0028 U	0.00055 U	0.0011 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	**DET**	0.00055 U	--	--	--	--	--
UG-MW37	UG-MW37-18-19	09/19/13	Exploration	18 - 19	Present	--	--	--	--	0.00065 U	0.0032 U	0.00065 U	0.0013 U	0.00065 U	0.00065 U	0.00065 U	0.00065 U	0.00065 U	0.00065 U	**DET**	0.00065 U	--	--	--	--	--
2016 Agreed Order Investigation																										
A8-MW2S	A8-MW2S-0-1	04/17/19	Exploration	0 - 1	Present	--	6.3 U	50 U	**320**	0.0011 U	**0.0066**	0.0011 U	0.0021 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	**0.054**	**0.11**	11 U	**1.6**	**290**	--
A8-MW2S	A8-MW2S-1-2	04/17/19	Exploration	1 - 2	Present	ND	--	--	--	0.0012 U	**0.0062**	0.0012 U	0.0023 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	**0.31**	**0.48**	**15**	**1.2**	**3,000**	--
A8-MW2S	A8-MW2S-3-4	04/17/19	Exploration	3 - 4	Present	ND	--	--	--	0.00088 U	**0.0060**	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	ND	0.00088 U	0.0060 U	12 U	0.59 U	**7.6**	--
A8-MW2S	A8-MW2S-9-10	04/17/19	Exploration	9 - 10	Present	--	--	28 U	55 U	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	ND	--	--	--	--	--	--
A8-MW2S	A8-MW2S-14-15	04/17/19	Exploration	14 - 15	Present	--	--	27 U	54 U	--	--	--	--	--	--	0.00094 U	0.00094 U	--	--	ND	--	--	--	--	--	--
A8-MW2S	A8-MW2S-19-20	04/17/19	Exploration	19 - 20	Present	--	--	27 U	53 U	--	--	--	--	--	--	0.00089 U	0.00089 U	--	--	ND	--	--	--	--	--	--
A8-MW2S	A8-MW2S-20-21	04/17/19	Exploration	20 - 21	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	**DET**	--	--	--	--	--	--
A8-MW2S	A8-MW2S-24-25	04/17/19	Exploration	24 - 25	Present	--	--	26 U	53 U	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
A8-MW3S	A8-MW3S-0-1	04/17/19	Exploration	0 - 1	Present	**0**	--	38 U	**540**	0.0010 U	0.0050 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	**0.036**	**12**	0.57 U	**12**	--
A8-MW3S	A8-MW3S-1-1.5	04/17/19	Exploration	1 - 1.5	Present	--	5.2 U	56 U	**960**	0.0012 U	0.0060 U	0.0012 U	0.0024 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	0.0012 U	**0.18**	11 U	0.56 U	**68**	--
A8-MW3S	A8-MW3S-3-4	04/17/19	Exploration	3 - 4	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0077 U	**0.016**	--	--	--	--
A8-MW3S	A8-MW3S-5-6	04/17/19	Exploration	5 - 6	Present	--	--	27 U	53 U	--	--	--	--	--	--	0.00087 U	0.00087 U	--	--	ND	--	--	--	--	--	--
A8-MW3S	A8-MW3S-14-15	04/17/19	Exploration	14 - 15	Present	--	--	27 U	55 U	--	--	--	--	--	--	0.00087 U	0.00087 U	--	--	ND	--	--	--	--	--	--
A8-MW3S	A8-MW3S-17-18	04/17/19	Exploration	17 - 18	Present	--	--	27 U	55 U	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	ND	--	--	--	--	--	--
A8-MW3S	A8-MW3S-19-20	04/17/19	Exploration	19 - 20	Present	--	--	26 U	53 U	--	--	--	--	--	--	0.00098 U	0.00098 U	--	--	**DET**	--	--	--	--	--	--
UG-MW24S	UG-MW24S-0-1	04/18/19	Exploration	0 - 1	Present	ND	--	--	--	0.0010 U	0.0051 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	**0.015**	**0.064**	12 U	0.61 U	**130**	--
UG-MW24S	UG-MW24S-4-5	04/18/19	Exploration	4 - 5	Present	--	--	--	--	--	--	--	--	--	--	0.00091 U	0.00091 U	--	--	**DET**	--	--	--	--	--	--
UG-MW24S	UG-MW24S-9-10	04/18/19	Exploration	9 - 10	Present	--	--	--	--	--	--	--	--	--	--	0.00088 U	0.00088 U	--	--	**DET**	--	--	--	--	--	--
UG-MW24S	UG-MW24S-15-15.5	04/18/19	Exploration	15 - 15.5	Present	--	--	27 U	55 U	--	--	--	--	--	--	0.00081 U	0.00081 U	--	--	**DET**	0.0073 U	0.0055 U	--	--	--	--
UG-MW24S	UG-MW24S-17-18	04/18/19	Exploration	17 - 18	Present	--	--	--	--	--	--	--	--	--	--	0.00094 U	0.00094 U	--	--	**DET**	0.0072 U	0.0054 U	--	--	--	--
UG-MW24S	UG-MW24S-19-20	04/18/19	Exploration	19 - 20	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	**DET**	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-0-1	04/17/19	Exploration	0 - 1	Present	ND	--	--	--	0.0011 U	0.0054 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	**0.015**	**0.017**	12 U	0.60 U	**42**	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UG-MW37RD	UG-MW37RD-4-5	04/17/19	Exploration	4 - 5	Present	--	--	--	--	--	--	--	--	--	--	0.0013 U	0.0013 U	--	--	ND	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-14-15	04/17/19	Exploration	14 - 15	Present	--	--	--	--	--	--	--	--	--	--	0.00081 U	0.00081 U	--	--	ND	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-18.5-19.5	04/17/19	Exploration	18.5 - 19.5	Present	--	--	--	--	--	--	--	--	--	--	0.00097 U	0.00097 U	--	--	ND	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-20-21	04/17/19	Exploration	20 - 21	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	**DET**	0.0079 U	0.0060 U	--	--	--	--
UG-MW37RD	UG-MW37RD-24-25	04/17/19	Exploration	24 - 25	Present	--	--	--	--	--	--	--	--	--	--	0.0012 U	0.0012 U	--	--	**DET**	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-29-30	04/17/19	Exploration	29 - 30	Present	--	--	--	--	--	--	--	--	--	--	0.0012 U	0.0012 U	--	--	**DET**	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-34-35	04/17/19	Exploration	34 - 35	Present	--	--	--	--	--	--	--	--	--	--	0.00094 U	0.00094 U	--	--	ND	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-39-40	04/17/19	Exploration	39 - 40	Present	--	--	--	--	--	--	--	--	--	--	0.00092 U	0.00092 U	--	--	**DET**	--	--	--	--	--	--
UG-MW37RD	DUP-1-20190417	04/17/19	Exploration	44 - 45	Present	--	--	--	--	--	--	--	--	--	--	0.00094 U	0.00094 U	--	--	**DET**	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-44-45	04/17/19	Exploration	44 - 45	Present	--	--	--	--	--	--	--	--	--	--	0.00099 U	0.00099 U	--	--	ND	--	--	--	--	--	--
UG-MW37RR	UG-MW37RR-4.5	10/25/19	Exploration	3.5 - 4.5	Present	--	--	28 U	57 U	0.00085 U	0.0043 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	ND	0.00085 U	--	--	--	--	--
UG-MW37RR	UG-MW37RR-9-10	10/25/19	Exploration	9 - 10	Present	--	--	27 U	55 U	0.00090 U	0.0045 U	0.00090 U	0.0018 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	ND	0.00090 U	--	--	--	--	--
UG-MW37RR	UG-MW37RR-14-15	10/25/19	Exploration	14 - 15	Present	--	--	28 U	56 U	0.00083 U	0.0042 U	0.00083 U	0.0017 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	ND	0.00083 U	--	--	--	--	--
UG-MW37RR	UG-MW37RR-19-20	10/25/19	Exploration	19 - 20	Present	--	--	27 U	53 U	0.0010 U	0.0051 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	**DET**	0.0010 U	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 9-4 and 9-5.

[2] Chemical analytical results in this table include contaminants of conern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical results is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

[4] Benzene may have been analyzed as full volatile organic compound (VOC) method and/or BTEX only. The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[5] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[6] Naphthalene may have been analyzed as a VOC, polycyclic aromatic hydrocarbon (PAH) and/or semi-volatile organic compound (SVOC). The lowest PQL or the greatest detected concentration is shown.

[7] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[8] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[9] Soil PCUL is based on the lowest value for protection of direct contact and groundwater as drinking water within the saturated zone and adjusted for practical quantitation limit (PQL) and Natural Background (see Tables 3-1 and 3-2).

[10] Soil screening level based on Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-6).

-- = not tested

1,2,4-TMB = 1,2,4-trimethylbenzene

1,3,5-TMB = 1,3,5-trimethylbenzene

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

DET = detected

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons

J = estimated value by laboratory

mg/kg = milligram per kilogram

MTBE = methyl tert-butyl ether

ND = not DET

NE = not established

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

U = analyte was ND at or greater than the listed reporting limit.

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

Italic font type indicates the non-detect result is greater than the PCUL.

Gray text indicates that soil represented by the sample has been removed and that the sample result no longer represents current conditions.

Shading indicates that the DET concentration is greater than the PCUL.

Shading indicates that the DET concentration is greater than the screening level for vapor intrusion and/or the PCUL.

Table 9-5

Summary of Groundwater Chemical Analytical Results - Derville

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																					
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
Supplemental Investigations Under the 1997 Agreed Order																												
UG-MW24	UG-MW24-130715	07/15/13	Qva	Permanent	30.88	165.20	--	100 U	260 U	420 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.29 U	0.28 U	0.20 U	ND	0.096 U	0.00725 U	--	3.3 U	--	1.1 U	--
UG-MW37	UG-MW37-130930	09/30/13	Qvi	Permanent	n/a	n/a	--	100 U	260 U	**550**	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	0.097 U	**0.00865**	--	3.0 U	--	1.0 U	--
2016 Agreed Order Investigation																												
A8-MW2S	A8-MW2S-20190515	05/15/19	Qvi	Permanent	11.05	183.38	--	100 U	250 U	400 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	0.094 U	0.0071 U	--	--	--	--	--
A8-MW2S	A8-MW2S-190918	09/18/19	Qvi	Permanent	14.24	180.19	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
A8-MW2S	A8-MW2S-200312	03/12/20	Qvi	Permanent	10.32	184.11	--	100 U	**250**	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
A8-MW2S	A8-MW2S-200915	09/15/20	Qvi	Permanent	14.52	179.91	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A8-MW3S	A8-MW3S-20190515	05/15/19	Qvi	Permanent	4.43	192.13	--	100 U	260 U	410 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	0.094 U	0.0071 U	--	--	--	--	--
A8-MW3S	A8-MW3S-190918	09/18/19	Qvi	Permanent	7.35	189.21	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A8-MW3S	A8-MW3S-200312	03/12/20	Qvi	Permanent	3.58	192.98	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A8-MW3S	A8-MW3S-200915	09/15/20	Qvi	Permanent	8.20	188.36	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW24	UG-MW24-161205	12/05/16	Qva	Permanent	31.46	165.34	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
UG-MW24	UG-MW24-181003	10/03/18	Qva	Permanent	31.98	164.82	--	--	250 U	400 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
UG-MW24	UG-MW24-20190307	03/07/19	Qva	Permanent	31.25	165.55	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
UG-MW24	UG-MW24-190918	09/18/19	Qva	Permanent	32.99	163.81	--	--	280 U	450 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW24	UG-MW24-200312	03/12/20	Qva	Permanent	31.44	165.36	--	--	200 U	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW24	UG-MW24-200915	09/15/20	Qva	Permanent	32.43	164.37	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW24S	UG-MW24S-20190516	05/16/19	Qvi	Permanent	5.41	191.34	--	--	260 U	410 U	*10 U*	50 U	10 U	20 U	10 U	10 U	*10 U*	*10 U*	10 U	10 U	**DET**	0.10 U	0.00755 U	--	--	--	--	--
UG-MW24S	UG-MW24S-190918	09/18/19	Qvi	Permanent	8.11	188.64	--	--	290 U	470 U	*10 U*	50 U	10 U	20 U	10 U	10 U	*10 U*	*10 U*	10 U	10 U	**DET**	50 U	--	--	--	--	--	--
UG-MW24S	UG-MW24S-200312	03/12/20	Qvi	Permanent	4.67	192.08	--	100 U	200 U	200 U	*10 U*	50 U	10 U	20 U	10 U	10 U	*10 U*	*10 U*	10 U	10 U	**DET**	50 U	--	--	--	--	--	--
UG-MW24S	UG-MW24S-200915	09/15/20	Qvi	Permanent	8.64	188.11	--	100 U	210 U	210 U	4.0 U	20 U	4.0 U	8.0 U	4.0 U	4.0 U	*4.0 U*	4.0 U	4.0 U	4.0 U	**DET**	20 U	--	--	--	--	--	--
UG-MW37R	UG-MW37R-161205	12/05/16	Qvi	Permanent	2.41	199.56	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
UG-MW37R	UG-MW37R-181003	10/03/18	Qvi	Permanent	8.13	193.84	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
UG-MW37R	UG-MW37R-20190307	03/07/19	Qvi	Permanent	4.12	197.85	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
UG-MW37R	UG-MW37R-190918	09/18/19	Qvi	Permanent	7.49	194.48	--	--	280 U	450 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW37R	UG-MW37R-200312	03/12/20	Qvi	Permanent	3.07	198.90	--	100 U	200 U	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW37R	UG-MW37R-200915	09/15/20	Qvi	Permanent	8.63	193.34	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-20190515	05/15/19	Qva	Permanent	35.42	166.39	--	100 U	260 U	410 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	0.094 U	0.0071 U	--	--	--	--	--
UG-MW37RD	UG-MW37RD-190918	09/18/19	Qva	Permanent	36.34	165.47	--	--	290 U	470 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW37RD	DUP-1-190918	09/18/19	Qva	Permanent	n/a	n/a	--	--	290 U	460 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-200312	03/12/20	Qva	Permanent	35.64	166.17	--	100 U	200 U	200 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW37RD	DUP2-200312	03/12/20	Qva	Permanent	n/a	n/a	--	100 U	210 U	210 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW37RD	UG-MW37RD-200915	09/15/20	Qva	Permanent	36.52	165.29	--	100 U	210 U	210 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW37RD	DUP-8-200915	09/15/20	Qva	Permanent	n/a	n/a	--	100 U	210 U	210 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW37RR	UG-MW37RR-191101	11/01/19	Qvi	Permanent	n/a	n/a	--	--	180 U	300 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
UG-MW37RR	UG-MW37RR-200312	03/12/20	Qvi	Permanent	0.94	196.42	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW37RR	UG-MW37RR-200915	09/15/20	Qvi	Permanent	7.53	189.83	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 9-4 and 9-5.

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical results is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 1,000 µg/L.

[4] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[5] Naphthalene may have been analyzed as a volatile organic compound (VOC), polycyclic aromatic hydrocarbon (PAH), and/or semi-volatile organic compound (SVOC). The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[6] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[7] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[8] Groundwater PCUL is based on the lowest value for protection of groundwater as drinking water adjusted for PQL (see Table 3-3).

[9] Groundwater screening level referenced from Ecology's CLARC (Cleanup Levels and Risk Calculation) Table (Excel) dated January 2023 and Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-5 and 3-6).

n/a = not available
-- = not tested
µg/L = microgram per liter
1,2,4-TMB = 1,2,4-trimethylbenzene
1,3,5-TMB = 1,3,5-trimethylbenzene
BTEX = benzene, toluene, ethylbenzene and xylenes
CVOCs = chlorinated volatile organic compounds
DET = detected
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons
J = estimated value by laboratory
MTBE = methyl tert-butyl ether
Qva = Vashon advance outwash
Qvi = Vashon ice-contact deposits
TOC = top of casing
TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil
TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification
U = analyte was ND at or greater than the listed reporting limit
Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.
Italic font type indicates the non-detect result is greater than the PCUL.
Shading indicates that the detected concentration is greater than the PCUL.
Shading indicates that the detected concentration is greater than the screening level for vapor intrusion and/or the PCUL.

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\0183109913_F9-01_Derville_Overview Date Exported: 05/23/23 by estrandhagen

Notes:
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.

Data Source: Aerial provided by City of Tacoma, 2015

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern
- Parcel Boundary and Number

W S N E

0 30

Feet

Overview
Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-1

1:000 Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Notes:
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.

Data Source: Aerial provided by City of Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern
- Parcel Boundary and Number (Historic)
- Historic Building Footprint/Feature

W S N E

0 30

Feet

Historic Features and Land Use
Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-2

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\0183109913_F9-02_Derville_Historical Date Exported: 05/23/23 by estrandhagen

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\0183109913_F9-03_Derville_Current Date Exported: 05/23/23 by estrandhagen

Notes:
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.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Active Sanitary Sewer Utility
- Active Stormwater Utility
- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern
- Parcel Boundary and Number

W N S E

0 30

Feet

Current Features and Utility Infrastructure Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-3

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\018310913_F9-04_Derville_PreviousInvestigations Date Exported: 05/23/23 by estrandhagen

Notes:

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.

Data Source: Aerial provided by City of Tacoma, 1998

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Test Pit
- Magnetic Anomaly
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern

W N E S

0 30

Feet

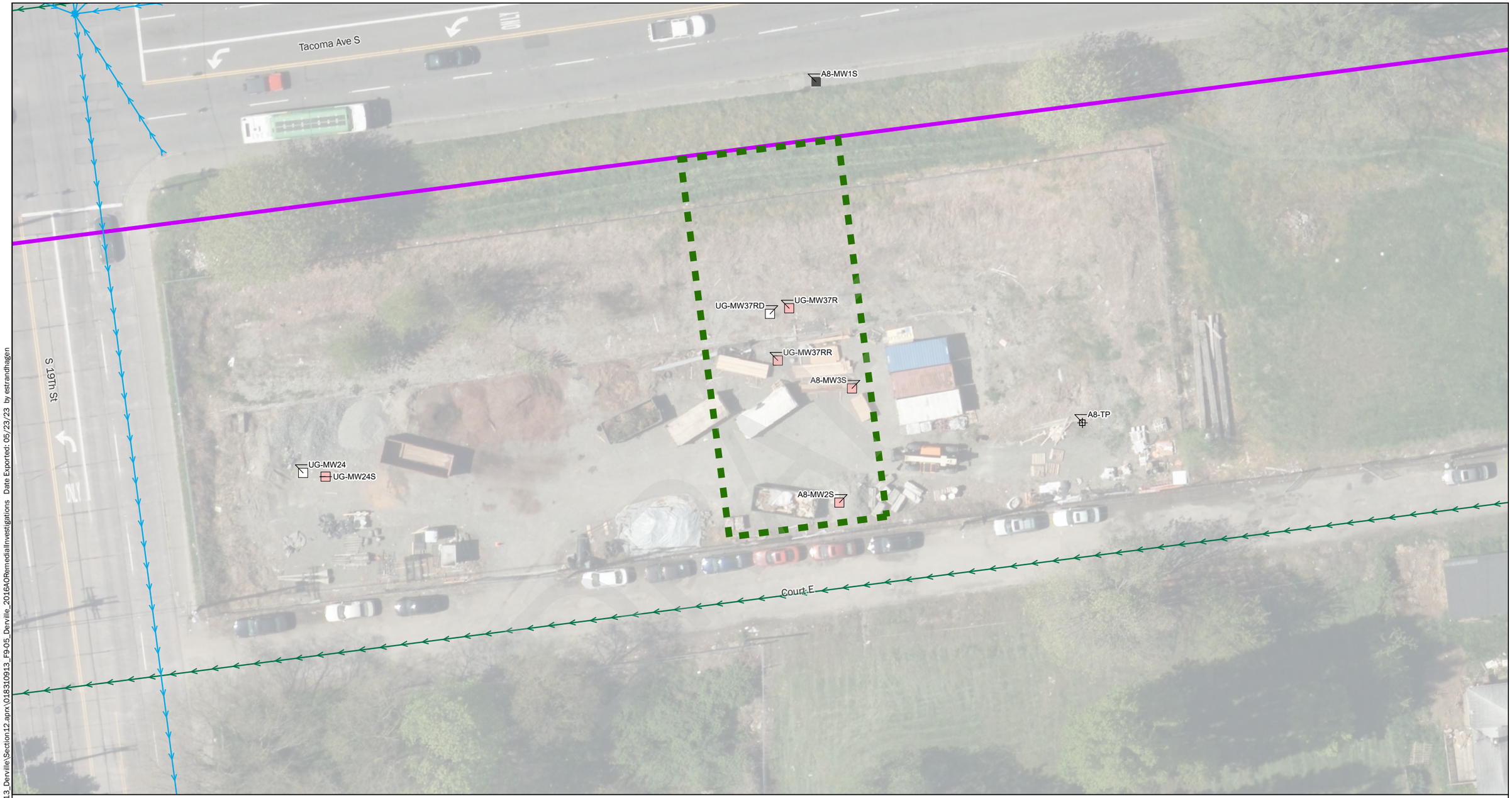
Previous Environmental Investigations Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-4

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet



Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Well - Not Completed
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern

Data Source: Aerial provided by City of Tacoma, 2015

W S N E

0 30

Feet

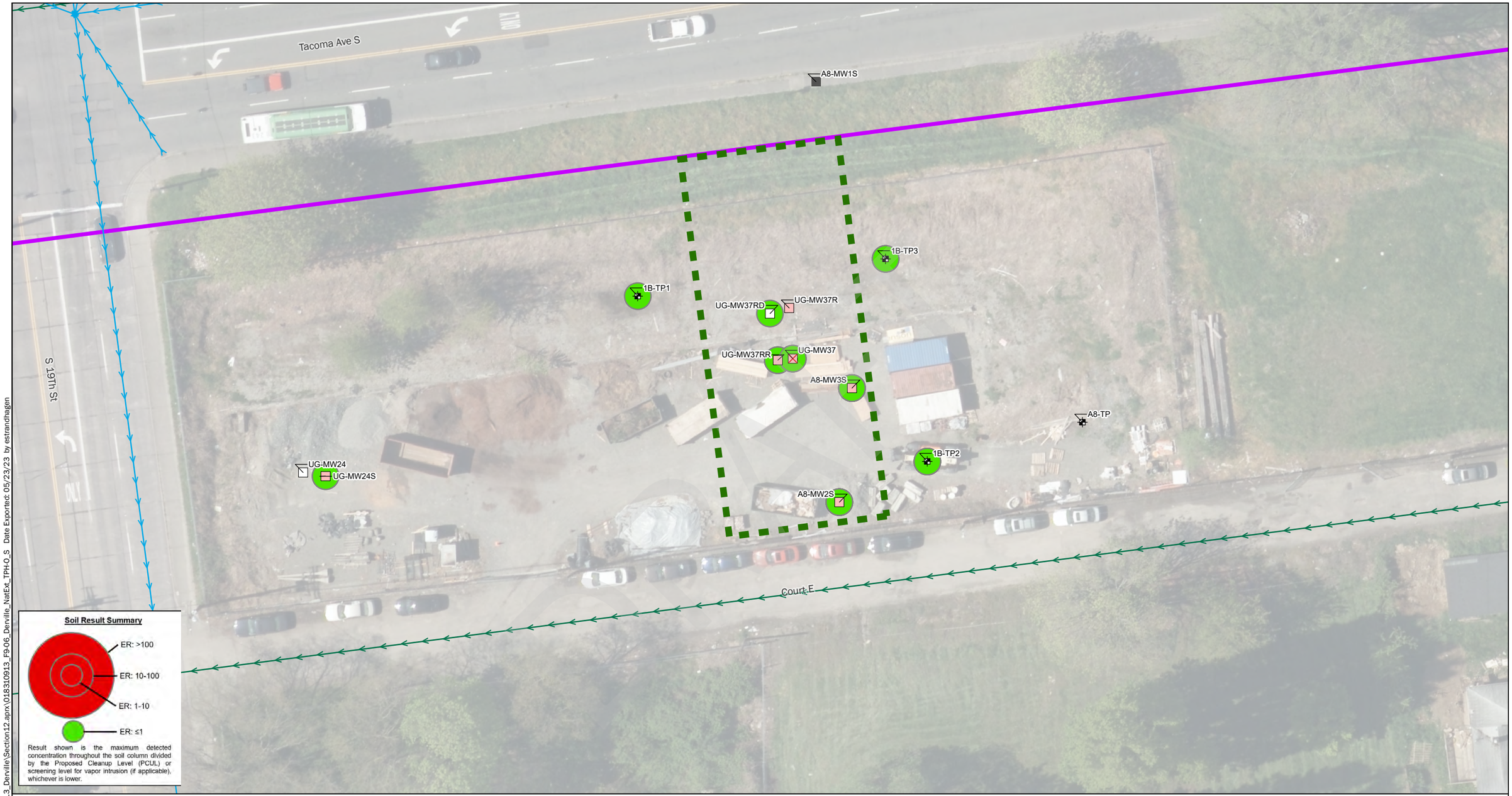
2016 Agreed Order Remedial Investigation Locations
Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-5

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\0183109913_F9-05_Derville_2016AORemedialInvestigations Date Exported: 05/23/23 by estrandhagen



Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Well - Not Completed
- Test Pit
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern

Data Source: Aerial provided by City of Tacoma, 2015

W N S E

0 30

Feet

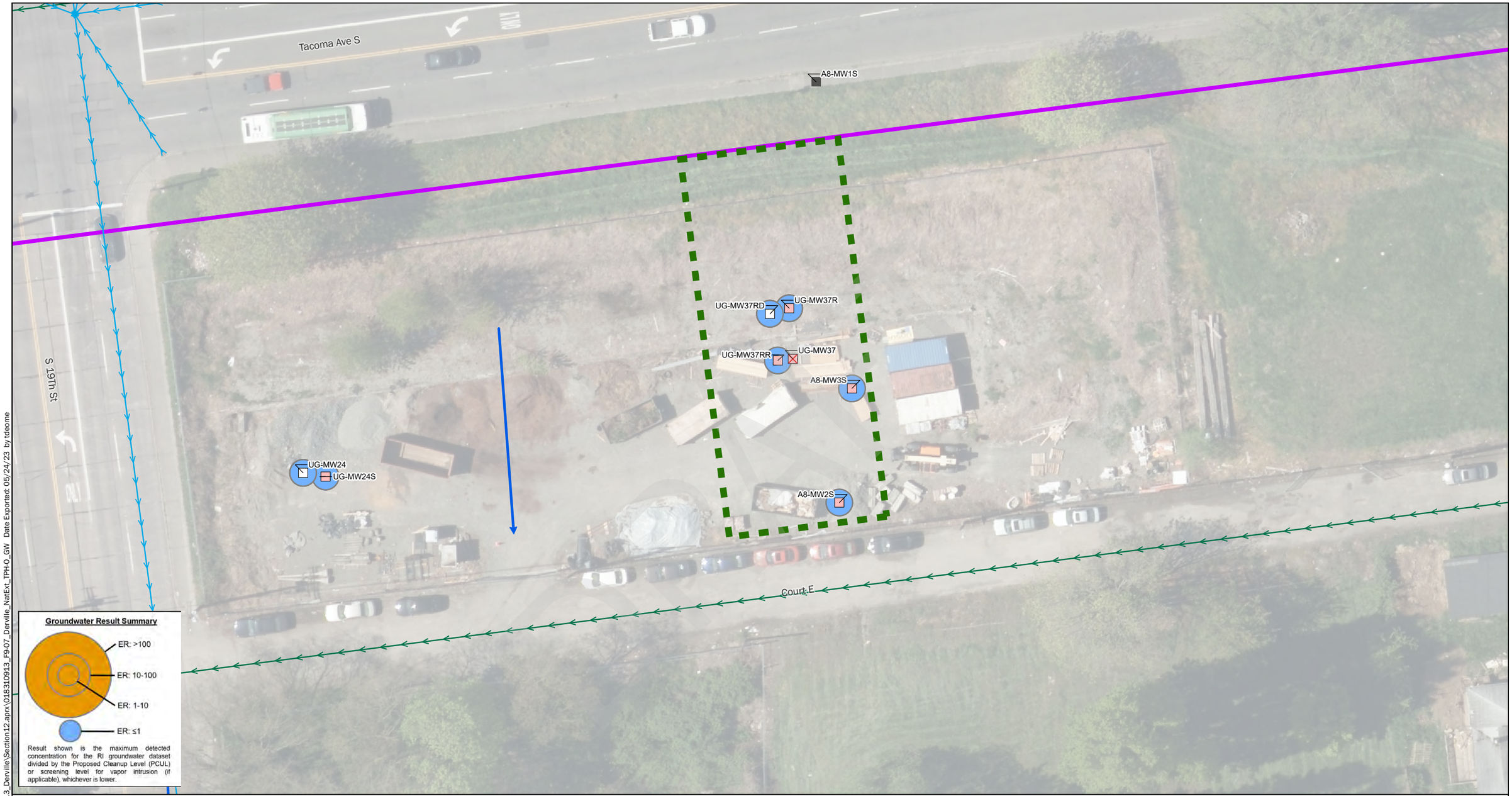
Summary of TPH-O in Soil
Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-6

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\0183109913_F9-06_Derville_NatExt_TPH-O_S Date Exported: 05/23/23 by estrandhagen



Notes:

TPH-O = Oil-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 500 micrograms per liter (µg/L)
– See Section Tables
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.

Data Source: Aerial provided by City of Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well - Decommissioned
- Well - Not Completed
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Qvi Aquifer Groundwater Flow Direction
- University of Washington - Tacoma Campus Master Plan Boundary
- Derville Area of Concern

N W S E

0 30

Feet

Summary of TPH-O in the Qvi/Qva Aquifer Derville

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 9-7

P:\0\0183109\GIS\MXDs\RI_working\Section13_Derville\Section12.aprx\0183109913_F9-07_Derville_NatExt_TPH-O_GW Date Exported: 05/24/23 by tdeome

Table 10-1

Soil Investigation Summary - Kelly

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]													
							Petroleum Hydrocarbons				VOCs									
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
Supplemental Investigations Under the 1997 Agreed Order																				
UG-MW16	05/04/09	URS	Exploration	HSA	151.39	22		X	X	X	X	X	X	X			X			
UG-MW17	05/04/09	URS	Exploration	HSA	155.98	18		X	X	X	X	X	X	X			X			
1D-B2	06/14/13	GeoEngineers	Exploration	Direct Push	169	7.5	X				X	X	X	X	X		X	X		
1F-B1	07/18/13	GeoEngineers	Exploration	Direct Push	151	10.5	X				X	X	X	X	X		X			
1F-B2	07/18/13	GeoEngineers	Exploration	Direct Push	152	10.5	X	X	X	X	X	X	X	X	X		X			
1F-B3	06/12/13	GeoEngineers	Exploration	Direct Push	154	10	X				X	X	X	X	X		X	X		
1F-B4	06/11/13	GeoEngineers	Exploration	Direct Push	155	15.5	X				X	X	X	X	X		X			
1F-B5	06/13/13	GeoEngineers	Exploration	Direct Push	157	12	X				X	X	X	X	X		X			
1F-B6	06/11/13	GeoEngineers	Exploration	Direct Push	154	13.5	X				X	X	X	X	X		X			
1F-B7	06/11/13	GeoEngineers	Exploration	Direct Push	158	17	X				X	X	X	X	X		X			
1G-B1	06/10/13	GeoEngineers	Exploration	Direct Push	139	8.5	X				X	X	X	X	X		X			
1G-B3	06/10/13	GeoEngineers	Exploration	Direct Push	124	5.5	X				X	X	X	X	X		X			
1G-B4	06/17/13	GeoEngineers	Exploration	Direct Push	149	4.5	X		X	X	X	X	X	X	X		X			
1G-B5	06/11/13	GeoEngineers	Exploration	Direct Push	146	11.5	X				X	X	X	X	X		X			
UG-MW27	06/26/13	GeoEngineers	Exploration	Sonic	149.28	55.6		X	X	X	X	X	X	X	X		X			
UG-MW31	08/26/13	GeoEngineers	Exploration	Sonic	143.35	18	X				X	X	X	X	X		X			
2016 Agreed Order Investigation																				
A9-MW1D	08/16/16	GeoEngineers	Exploration	Sonic	156.48	70	X		X	X		X	X	X	X		X			
A9-MW1S	08/12/16	GeoEngineers	Exploration	Sonic	156.14	35	X								X		X			
A11-MW9D	04/19/19	GeoEngineers	Exploration	Sonic	159.27	60	X		X	X	X	X	X	X	X	X	X			
A11-MW9S	08/15/16	GeoEngineers	Exploration	Sonic	159.18	30	X		X	X		X	X	X	X		X			
A12-B5	06/14/19	GeoEngineers	Exploration	Direct Push	151	10		X	X	X	X	X	X	X	X		X			
A12-B6	06/14/19	GeoEngineers	Exploration	Direct Push	151	10		X	X	X	X	X	X	X	X		X			
A12-B7	06/14/19	GeoEngineers	Exploration	Direct Push	151	10		X			X	X	X	X						
A12-B8	06/14/19	GeoEngineers	Exploration	Direct Push	151	10		X	X	X	X	X	X	X	X		X			
A12-B9	06/14/19	GeoEngineers	Exploration	Direct Push	151	10		X	X	X	X	X	X	X	X		X			
UG-MW27S	08/23/16	GeoEngineers	Exploration	Sonic	149.13	30.5						X	X	X						
19th and Fawcett Parking Lot Capital Project																				
PAR-CONF-2	01/28/20	GeoEngineers	Confirmation	Grab	159	--									X		X			
PAR-CONF-3	02/10/20	GeoEngineers	Confirmation	Grab	160	--									X		X			

Notes:

[1] Sample locations are shown on Figures 10-4 through 10-6. Location identification nomenclature was added to select wells as necessary. For example PAR- was added to PAR-CONF-2.

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Kelly are summarized in Table 10-4. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

HSA = hollow stem auger

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 10-2

Groundwater Investigation Summary - Kelly

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
Supplemental Investigations Under the 1997 Agreed Order																	
UG-MW17	05/15/09	URS	Permanent	Qvi		X	X	X	X	X	X	X					
UG-MW16	05/15/09	URS	Permanent	Qvi		X	X	X	X	X	X	X					
1F-B7	06/11/13	GeoEngineers	Temporary	Qvi		X	X	X	X	X	X	X		X		X	
1F-B5	06/12/13	GeoEngineers	Temporary	Qvi		X	X	X	X	X	X	X		X		X	X
1F-B3	06/12/13	GeoEngineers	Temporary	Qvi		X	X	X	X	X	X	X		X		X	X
UG-MW16	06/17/13	GeoEngineers	Permanent	Qvi					X	X	X	X					X
UG-MW17	06/17/13	GeoEngineers	Permanent	Qvi					X	X	X	X					X
UG-MW27	07/02/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X		X		X	
UG-MW31	09/04/13	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X		X		X	
2016 Agreed Order Investigation																	
A9-MW1D	12/05/16	GeoEngineers	Permanent	Qva		X				X	X	X					
A9-MW1D	03/07/19	GeoEngineers	Permanent	Qva		X				X	X	X					
A9-MW1D	09/11/19	GeoEngineers	Permanent	Qva		X			X	X	X	X					
A9-MW1D	03/19/20	GeoEngineers	Permanent	Qva		X			X	X	X	X	X				
A9-MW1D	09/09/20	GeoEngineers	Permanent	Qva		X			X	X	X	X	X				
A9-MW1S	12/07/16	GeoEngineers	Permanent	Qvi		X				X	X	X					
A9-MW1S	03/07/19	GeoEngineers	Permanent	Qvi		X				X	X	X					
A9-MW1S	09/11/19	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
A9-MW1S	03/19/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X	X				
A9-MW1S	09/09/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X	X				
A11-MW9D	05/21/19	GeoEngineers	Permanent	Qva					X	X	X	X					
A11-MW9D	09/16/19	GeoEngineers	Permanent	Qva					X	X	X	X					
A11-MW9D	03/26/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
A11-MW9D	09/08/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
A11-MW9S	12/06/16	GeoEngineers	Permanent	Qvi						X	X	X					
A11-MW9S	10/02/18	GeoEngineers	Permanent	Qvi						X	X	X					
A11-MW9S	03/07/19	GeoEngineers	Permanent	Qvi						X	X	X					
A11-MW9S	09/16/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
A11-MW9S	03/26/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
A11-MW9S	09/08/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
UG-MW16	12/06/16	GeoEngineers	Permanent	Qvi		X				X	X	X				X	
UG-MW16	03/07/19	GeoEngineers	Permanent	Qvi		X				X	X	X				X	
UG-MW16	09/11/19	GeoEngineers	Permanent	Qvi		X			X	X	X	X				X	
UG-MW16	03/20/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW16	09/04/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW17	12/07/16	GeoEngineers	Permanent	Qvi		X				X	X	X				X	

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
UG-MW17	03/07/19	GeoEngineers	Permanent	Qvi		X				X	X	X				X	
UG-MW17	09/11/19	GeoEngineers	Permanent	Qvi		X			X	X	X	X				X	
UG-MW17	03/20/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW17	03/20/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW17	09/04/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW17	09/04/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW27	12/07/16	GeoEngineers	Permanent	Qva						X	X	X					
UG-MW27	03/06/19	GeoEngineers	Permanent	Qva						X	X	X					
UG-MW27	09/10/19	GeoEngineers	Permanent	Qva					X	X	X	X					
UG-MW27	03/03/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
UG-MW27	09/10/20	GeoEngineers	Permanent	Qva					X	X	X	X	X				
UG-MW27S	12/07/16	GeoEngineers	Permanent	Qvi						X	X	X					
UG-MW27S	03/06/19	GeoEngineers	Permanent	Qvi						X	X	X					
UG-MW27S	09/10/19	GeoEngineers	Permanent	Qvi					X	X	X	X					
UG-MW27S	03/04/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
UG-MW27S	09/10/20	GeoEngineers	Permanent	Qvi					X	X	X	X	X				
UG-MW31	12/06/16	GeoEngineers	Permanent	Qvi		X				X	X	X					
UG-MW31	03/08/19	GeoEngineers	Permanent	Qvi		X				X	X	X					
UG-MW31	09/11/19	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW31	03/05/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW31	03/05/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW31	09/04/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
UG-MW31	09/04/20	GeoEngineers	Permanent	Qvi		X			X	X	X	X					
Health Center Capital Project																	
HS_TW1	08/23/11	GeoEngineers	Temporary	Qvi					X	X	X	X					

Notes:

[1] Sample locations are shown on Figures 10-4 through 10-6. Location identification nomenclature was added to select wells as necessary (for example HS- was added to HS_TW1).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Kelly are summarized in Table 10-5. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 10-3

Well Construction Details - Kelly

University of Washington - Tacoma Campus

Tacoma, Washington

Well Identification[1]	Well Construction Date	Installed By	Ground Surface Elevation[2] (feet NGVD29)	Top of Casing Elevation (feet NGVD29)[2]	Top of Well Screen (feet bgs)	Bottom of Well Screen (feet bgs)	Top of Well Screen Elevation (feet NGVD29)	Bottom of Well Screen Elevation (feet NGVD29)	Lithology Across Well Screen Interval	Well Status	Well Type
Supplemental Investigations Under the 1997 Agreed Order											
UG-MW16	05/04/09	URS	151.39	150.99	7	17	144	134	Qvi	Existing	Permanent
UG-MW17	05/04/09	URS	155.98	155.46	3	18	152	137	Qvi	Existing	Permanent
1F-B3	06/12/13	GeoEngineers	154	--	5	10	149	144	Qvi	Decommissioned	Temporary
1F-B5	06/13/13	GeoEngineers	157	--	7	12	150	145	Qvi	Decommissioned	Temporary
1F-B7	06/11/13	GeoEngineers	158	--	12	17	146	141	Qvi	Decommissioned	Temporary
UG-MW27	06/26/13	GeoEngineers	149.28	148.68	41	56	108	93	Qva	Existing	Permanent
UG-MW31	08/26/13	GeoEngineers	143.35	142.92	8	18	135	125	Qvi	Existing	Permanent
2016 Agreed Order Investigation											
A9-MW1D	08/16/16	GeoEngineers	156.48	156.07	55	70	101	86	Qva	Existing	Permanent
A9-MW1S	08/12/16	GeoEngineers	156.14	155.82	20	35	136	121	Qvi	Existing	Permanent
A11-MW9D	04/19/19	GeoEngineers	159.27	158.77	40	55	119	104	Qva	Existing	Permanent
A11-MW9S	08/15/16	GeoEngineers	159.18	158.89	9	25	150	134	Qvi	Existing	Permanent
UG-MW27S	08/23/16	GeoEngineers	149.13	148.77	10	26	139	123	Qvi	Existing	Permanent
Health Center Capital Project											
HS_TW1	08/23/11	GeoEngineers	125	--	0	2	125	123	Qvi	Decommissioned	Temporary

Notes:

[1] Well locations are shown on Figures 10-4 through 10-6. Location identification nomenclature was added to select wells as necessary (for example HS- was added to HS_TW1).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

bgs = below ground surface

NGVD29 = National Geodetic Vertical Datum of 1929

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

URS = United Research Services Corporation (formerly)

Table 10-4

Summary of Soil Chemical Analytical Results - Kelly

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Supplemental Investigations Under the 1997 Agreed Order																									
1D-B2	1D-B2-0-1	06/14/13	Exploration	0 - 1	Present	ND	--	--	--	0.00078 U	0.0078 U	0.00078 U	0.0016 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	ND	0.00078 U	0.0057 U	11 U	0.57 U	5.7 U	0.057 U
1D-B2	1D-B2-6-7	06/14/13	Exploration	6 - 7	Present	ND	--	--	--	0.00083 U	0.0083 U	0.00083 U	0.0017 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	ND	0.00083 U	0.0056 U	11 U	0.55 U	5.5 U	0.055 U
1F-B1	1F-B1-0.3-1.3	07/18/13	Exploration	0.3 - 1.3	Present	ND	--	--	--	0.0013 U	0.013 U	0.0013 U	0.0026 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	ND	0.0013 U	0.0053 U	11 U	0.53 U	5.3 U	--
1F-B1	1F-B1-4-5	07/18/13	Exploration	4 - 5	Present	ND	--	--	--	0.00094 U	0.0094 U	0.00094 U	0.0019 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	ND	0.00094 U	0.0056 U	11 U	0.56 U	5.6 U	--
1F-B1	1F-B1-9-10	07/18/13	Exploration	9 - 10	Present	ND	--	--	--	0.00080 U	0.0080 U	0.00080 U	0.0016 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	DET	0.00080 U	0.0057 U	11 U	0.56 U	5.6 U	--
1F-B2	1F-B2-0.3-1.3	07/18/13	Exploration	0.3 - 1.3	Present	ND	--	--	--	0.00085 U	0.0085 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	ND	0.00085 U	**0.019**	10 U	0.52 U	5.2 U	--
1F-B2	1F-B2-7-8	07/18/13	Exploration	7 - 8	Present	**G,O**	**940 J**	**94 J**	**200**	0.00065 U	0.0065 U	0.00065 U	0.0013 U	**0.050**	**0.0033**	0.00065 U	0.00065 U	0.00065 U	**0.0085**	ND	**0.0031**	**0.0056**	11 U	0.55 U	5.5 U	--
1F-B2	1F-B2-9-10	07/18/13	Exploration	9 - 10	Present	ND	--	--	--	0.00071 U	0.0071 U	0.00071 U	0.0014 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	ND	0.00071 U	0.0055 U	11 U	0.55 U	5.5 U	--
1F-B3	1F-B3-2-3	06/12/13	Exploration	2 - 3	Present	ND	--	--	--	0.00089 U	0.0089 U	0.00089 U	0.0018 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	ND	0.00089 U	0.0060 U	12 U	0.60 U	6.0 U	0.060 U
1F-B3	1F-B3-5-6	06/12/13	Exploration	5 - 6	Present	ND	--	--	--	0.00078 U	0.0078 U	0.00078 U	0.0016 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	ND	0.00078 U	**0.0064**	11 U	0.57 U	5.7 U	0.057 U
1F-B4	1F-B4-2-3	06/11/13	Exploration	2 - 3	Present	ND	--	--	--	0.00084 U	0.0084 U	0.00084 U	0.0017 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	ND	0.00084 U	0.0055 U	11 U	0.54 U	5.4 U	--
1F-B4	DUPE-130611-S-1	06/11/13	Exploration	2 - 3	Present	ND	--	--	--	0.00077 U	0.0077 U	0.00077 U	0.0015 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	ND	0.00077 U	0.0054 U	11 U	0.54 U	5.4 U	--
1F-B4	1F-B4-13-14	06/11/13	Exploration	13 - 14	Present	ND	--	--	--	0.00085 U	0.0085 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	DET	0.00085 U	0.0059 U	12 U	0.59 U	5.9 U	--
1F-B5	1F-B5-3-4	06/13/13	Exploration	3 - 4	Present	ND	--	--	--	0.00086 U	0.0086 U	0.00086 U	0.0017 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	ND	0.00086 U	0.0054 U	11 U	0.54 U	5.4 U	--
1F-B5	1F-B5-7-8	06/13/13	Exploration	7 - 8	Present	ND	--	--	--	0.00083 U	0.0083 U	0.00083 U	0.0017 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U	DET	0.00083 U	0.0057 U	11 U	0.56 U	5.6 U	--
1F-B6	1F-B6-4-5	06/11/13	Exploration	4 - 5	Present	ND	--	--	--	0.00098 U	0.0098 U	0.00098 U	0.0020 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	ND	**0.010**	**0.046**	11 U	0.53 U	5.3 U	--
1F-B6	1F-B6-12-13	06/11/13	Exploration	12 - 13	Present	ND	--	--	--	0.00071 U	0.0071 U	0.00071 U	0.0014 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	ND	0.00071 U	0.0056 U	11 U	0.55 U	5.5 U	--
1F-B7	1F-B7-3-4	06/11/13	Exploration	3 - 4	Present	ND	--	--	--	0.0010 U	0.010 U	0.0010 U	0.0021 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	0.0053 U	11 U	0.53 U	5.3 U	--
1F-B7	1F-B7-9-10	06/11/13	Exploration	9 - 10	Present	--	--	--	--	0.00088 U	0.0088 U	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	ND	0.00088 U	--	--	--	--	--
1F-B7	1F-B7-14-15	06/11/13	Exploration	14 - 15	Present	ND	--	--	--	0.00093 U	0.0093 U	0.00093 U	0.0019 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	DET	0.00093 U	0.0060 U	12 U	0.59 U	5.9 U	--
1G-B1	1G-B1-2-3	06/10/13	Exploration	2 - 3	Present	ND	--	--	--	0.00081 U	0.0081 U	0.00081 U	0.0016 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	ND	0.00081 U	0.0055 U	11 U	0.55 U	5.5 U	--
1G-B1	1G-B1-7-8	06/10/13	Exploration	7 - 8	Present	--	--	--	--	0.00088 UJ	0.0088 UJ	0.00088 UJ	0.0018 UJ	0.00088 UJ	0.00088 UJ	0.00088 UJ	0.00088 UJ	0.00088 UJ	0.00088 UJ	ND	0.00088 UJ	--	--	--	--	--
1G-B3	1G-B3-2-3	06/10/13	Exploration	2 - 3	Present	ND	--	--	--	0.00094 U	0.0094 U	0.00094 U	0.0019 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	ND	0.00094 U	0.0056 U	11 U	0.56 U	5.6 U	--
1G-B4	1G-B4-1-2	06/17/13	Exploration	1 - 2	Present	**0**	--	27 U	**88**	0.0016 U	0.016 U	0.0016 U	0.0032 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	ND	0.0016 U	0.0054 U	11 U	0.54 U	**5.8**	--
1G-B5	1G-B5-3-4	06/11/13	Exploration	3 - 4	Present	ND	--	--	--	0.00081 U	0.0081 U	0.00081 U	0.0016 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	ND	0.00081 U	0.0055 U	11 U	0.54 U	5.4 U	--
1G-B5	1G-B5-10-11	06/11/13	Exploration	10 - 11	Present	--	--	--	--	0.00087 U	0.0087 U	0.00087 U	0.0017 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	DET	0.00087 U	--	--	--	--	--
UG-MW27	UG-MW27-16-17	06/26/13	Exploration	16 - 17	Present	--	4.1 U	28 U	56 U	0.00072 U	0.0072 U	0.00072 U	0.0014 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	ND	0.00072 U	0.0056 U	11 U	0.56 U	5.6 U	--
UG-MW27	UG-MW27-25-26	06/26/13	Exploration	25 - 26	Present	--	6.0 U	31 U	61 U	0.00098 U	0.0098 U	0.00098 U	0.0020 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	DET	0.00098 U	0.0061 U	12 U	0.61 U	6.1 U	--
UG-MW27	UG-MW27-30-31	06/27/13	Exploration	30 - 31	Present	--	6.4 U	31 U	61 U	0.0010 U	0.010 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	0.0062 U	12 U	0.61 U	6.1 U	--
UG-MW27	UG-MW27-54-55	06/27/13	Exploration	54 - 55	Present	--	6.4 U	31 U	62 U	0.0010 U	0.010 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	0.0063 U	12 U	0.62 U	6.2 U	--
UG-MW31	UG-MW31-0.5-1	08/26/13	Exploration	0.5 - 1	Present	ND	--	--	--	0.00082 U	0.0041 U	0.00082 U	0.0016 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	ND	0.00082 U	0.0054 U	11 U	0.53 U	5.3 U	--
UG-MW31	UG-MW31-4-5	08/26/13	Exploration	4 - 5	Present	ND	--	--	--	0.00087 U	0.0044 U	0.00087 U	0.0017 U	**0.0011**	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	ND	0.00087 U	0.0054 U	11 U	0.54 U	5.4 U	--
UG-MW31	UG-MW31-6-7	08/26/13	Exploration	6 - 7	Present	--	--	--	--	0.00073 U	0.0036 U	0.00073 U	0.0015 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	ND	0.00073 U	--	--	--	--	--
UG-MW31	UG-MW31-11-12	08/26/13	Exploration	11 - 12	Present	--	--	--	--	0.00085 U	0.0043 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	DET	0.00085 U	--	--	--	--	--
UG-MW31	UG-MW31-15-16	08/26/13	Exploration	15 - 16	Present	--	--	--	--	0.00075 U	0.0037 U	0.00075 U	0.0015 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	DET	0.00075 U	--	--	--	--	--
UG-MW31	UG-MW31-16.5-17	08/26/13	Exploration	16.5 - 17	Present	--	--	--	--	0.00089 U	0.0045 U	0.00089 U	0.0018 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	DET	0.00089 U	--	--	--	--	--
UG-MW31	UG-MW31-20-21	08/26/13	Exploration	20 - 21	Present	--	--	--	--	0.00082 U	0.0041 U	0.00082 U	0.0016 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	DET	0.00082 U	--	--	--	--	--
UG-MW31	UG-MW31-22-23	08/26/13	Exploration	22 - 23	Present	--	--	--	--	0.00089 U	0.0045 U	0.00089 U	0.0018 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	DET	0.00089 U	--	--	--	--	--
UG-MW31	UG-MW31-29.5-30	08/26/13	Exploration	29.5 - 30	Present	--	--	--	--	0.00092 U	0.0046 U	0.00092 U	0.0018 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	DET	0.00092 U	--	--	--	--	--
UG-MW31	UG-MW31-32-33	08/26/13	Exploration	32 - 33	Present	--	--	--	--	0.00072 U	0.0036 U	0.00072 U	0.0014 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	0.00072 U	DET	0.00072 U	--	--	--	--	--
2016 Agreed Order Investigation																									
A9-MW1D	A9-MW1D-0-1	08/16/16	Exploration	0 - 1	Present	**0**	--	53 U	**510**	--	--	--	--	--	--	--	--	--	--	0.0070 U	**0.0070**	11 U	0.53 U	5.3 U	--
A9-MW1D	A9-MW1D-4-5	08/16/16	Exploration	4 - 5	Present	ND	--	--	--	--	--	--	--	--	--	0.00084 U	0.00084 U	--	--	ND	--	--	--	--	--	--
A9-MW1D	A9-MW1D-7-8	08/16/16	Exploration	7 - 8	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A9-MW1D	A9-MW1D-9-10	08/16/16	Exploration	9 - 10	Present	--	--	--	--	--	--	--	--	--	--	0.00059 U	0.00059 U	--	--	DET	--	--	--	--	--	--
A9-MW1D	A9-MW1D-14-15	08/16/16	Exploration	14 - 15	Present	--	--	--	--	--	--	--	--	--	--	0.00083 U	0.00083 U	--	--	DET	--	--	--	--	--	--
A9-MW1D	A9-MW1D-19-20	08/16/16	Exploration	19 - 20	Present	--	--	--	--	--	--	--	--	--	--	0.00072 U	0.00072 U	--	--	DET	--	--	--	--	--	--
A9-MW1D	A9-MW1D-24-25	08/16/16	Exploration	24 - 25	Present	--	--	--	--	--	--	--	--	--	--	0.00082 U	0.00082 U	--	--	DET	--	--	--	--	--	--
A9-MW1D	A9-MW1D-30-31	08/16/16	Exploration	30 - 31	Present	--	--	--	--	--	--	--	--	--	--	0.00069 U	0.00069 U	--	--	DET	--	--	--	--	--	--
A9-MW1D	A9-MW1D-36-36.5	08/16/16	Exploration	36 - 36.5	Present	--	--	--	--	--	--	--	--	--	--	0.00083 U	0.00083 U	--	--	DET	--	--	--	--	--	--
A9-MW1D	A9-MW1D-38-39	08/16/16	Exploration	38 - 39	Present	--	--	--	--	--	--	--	--	--	--	0.00094 U	0.00094 U	--	--	ND	--	--	--	--	--	--
A9-MW1D	A9-MW1D-42-43	08/16/16	Exploration	42 - 43	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																				
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			Total PCB Aroclors[8]
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
A9-MW1D	A9-MW1D-49-50	08/16/16	Exploration	49 - 50	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
A9-MW1D	A9-MW1D-59-60	08/16/16	Exploration	59 - 60	Present	--	--	--	--	--	--	--	--	--	--	0.00096 U	0.00096 U	--	--	ND	--	--	--	--	--	--
A9-MW1D	A9-MW1D-69-70	08/16/16	Exploration	69 - 70	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
A9-MW1S	A9-MW1S-1-2	08/17/16	Exploration	1 - 2	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0072 U	0.0050 U	11 U	0.54 U	5.4 U	--
A9-MW1S	A9-MW1S-4-5	08/17/16	Exploration	4 - 5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A9-MW1S	A9-MW1S-9-10	08/17/16	Exploration	9 - 10	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A11-MW9D	A11-MW9D-0-1	04/19/19	Exploration	0 - 1	Present	**0**	--	31 U	**83**	0.0012 U	**0.016**	0.0012 U	0.0024 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	**0.56**	**1.3**	12 U	0.61 U	**21**	--
A11-MW9D	A11-MW9D-1-2	04/19/19	Exploration	1 - 2	Present	--	--	--	--	--	--	--	--	--	--	0.00088 U	0.00088 U	--	--	ND	0.0080 U	**0.013**	12 U	0.60 U	**46**	--
A11-MW9D	A11-MW9D-3-4	04/19/19	Exploration	3 - 4	Present	ND	--	--	--	0.00095 U	**0.013**	0.00095 U	0.0019 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	ND	0.00095 U	0.0056 U	11 U	0.56 U	5.6 U	--
A11-MW9D	A11-MW9D-9-10	04/19/19	Exploration	9 - 10	Present	--	--	--	--	--	--	--	--	--	--	0.00084 U	0.00084 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-10-11	04/19/19	Exploration	10 - 11	Present	--	--	--	--	--	--	--	--	--	--	0.00087 U	0.00087 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-15-16	04/19/19	Exploration	15 - 16	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	DET	--	--	--	--	--	--
A11-MW9D	A11-MW9D-19-20	04/19/19	Exploration	19 - 20	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	DET	0.0074 U	0.0056 U	--	--	--	--
A11-MW9D	A11-MW9D-24-25	04/19/19	Exploration	24 - 25	Present	--	--	--	--	--	--	--	--	--	--	0.00099 U	0.00099 U	--	--	DET	--	--	--	--	--	--
A11-MW9D	A11-MW9D-28-29	04/19/19	Exploration	28 - 29	Present	--	--	--	--	--	--	--	--	--	--	0.00087 U	0.00087 U	--	--	DET	--	--	--	--	--	--
A11-MW9D	A11-MW9D-31-32	04/19/19	Exploration	31 - 32	Present	--	--	--	--	--	--	--	--	--	--	0.00097 U	0.00097 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-32-33	04/19/19	Exploration	32 - 33	Present	--	--	--	--	--	--	--	--	--	--	0.00085 U	0.00085 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-37-38	04/19/19	Exploration	37 - 38	Present	--	--	--	--	--	--	--	--	--	--	0.00099 U	0.00099 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-43-44	04/19/19	Exploration	43 - 44	Present	--	--	--	--	--	--	--	--	--	--	0.00096 U	0.00096 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-48-49	04/19/19	Exploration	48 - 49	Present	--	--	--	--	--	--	--	--	--	--	0.00095 U	0.00095 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-52-53	04/19/19	Exploration	52 - 53	Present	--	--	--	--	--	--	--	--	--	--	0.00092 U	0.00092 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-54-55	04/19/19	Exploration	54 - 55	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	A11-MW9D-59-60	04/19/19	Exploration	59 - 60	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	ND	--	--	--	--	--	--
A11-MW9D	DUP-1-20190419	04/19/19	Exploration	59 - 60	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
A11-MW9S	A11-MW9S-0-1	08/15/16	Exploration	0 - 1	Present	**0**	--	44 U	**270**	--	--	--	--	--	--	0.0013 U	0.0013 U	--	--	ND	0.0080 U	**0.035**	12 U	0.60 U	**19**	--
A11-MW9S	A11-MW9S-2-3	08/15/16	Exploration	2 - 3	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0072 U	**0.029**	11 U	0.54 U	**26**	--
A11-MW9S	A11-MW9S-4-5	08/15/16	Exploration	4 - 5	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
A11-MW9S	A11-MW9S-11.5-12.5	08/15/16	Exploration	11.5 - 12.5	Present	--	--	--	--	--	--	--	--	--	--	0.0010 U	0.0010 U	--	--	DET	--	--	--	--	--	--
A11-MW9S	A11-MW9S-17-18	08/15/16	Exploration	17 - 18	Present	--	--	--	--	--	--	--	--	--	--	0.00079 U	0.00079 U	--	--	DET	--	--	--	--	--	--
A11-MW9S	A11-MW9S-18-19	08/15/16	Exploration	18 - 19	Present	--	--	--	--	--	--	--	--	--	--	0.00078 U	0.00078 U	--	--	DET	--	--	--	--	--	--
A11-MW9S	A11-MW9S-23.5-24.5	08/15/16	Exploration	23.5 - 24.5	Present	--	--	--	--	--	--	--	--	--	--	0.00076 U	0.00076 U	--	--	ND	--	--	--	--	--	--
A11-MW9S	A11-MW9S-29.5-30	08/15/16	Exploration	29.5 - 30	Present	--	--	--	--	--	--	--	--	--	--	0.00091 U	0.00091 U	--	--	DET	--	--	--	--	--	--
A12-B5	A12-B5-0-1	08/14/19	Exploration	0 - 1	Present	--	5.1 U	26 U	52 U	0.00098 U	0.0049 U	0.00098 U	0.0020 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	ND	0.00098 U	0.0052 U	10 U	0.52 U	5.2 U	--
A12-B5	A12-B5-5-6	08/14/19	Exploration	5 - 6	Present	--	5.3 U	--	--	0.0010 U	0.0050 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	--	--	--	--	--
A12-B5	A12-B5-7-8	08/14/19	Exploration	7 - 8	Present	--	5.0 U	--	--	0.00098 U	0.0049 U	0.00098 U	0.0020 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	0.00098 U	ND	0.00098 U	--	--	--	--	--
A12-B5	A12-B5-9-10	08/14/19	Exploration	9 - 10	Present	--	4.7 U	--	--	0.0012 U	0.0059 U	0.0012 U	0.0023 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	0.0012 U	--	--	--	--	--
A12-B6	A12-B6-1-2	08/14/19	Exploration	1 - 2	Present	--	5.8 U	27 U	53 U	0.0010 U	0.0050 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	0.0053 U	11 U	0.53 U	**13**	--
A12-B6	A12-B6-3-4	08/14/19	Exploration	3 - 4	Present	--	5.6 U	26 U	52 U	0.0016 U	0.0078 U	0.0016 U	0.0031 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	DET	0.0016 U	0.0052 U	10 U	0.52 U	5.2 U	--
A12-B6	A12-B6-5-6	08/14/19	Exploration	5 - 6	Present	--	4.9 U	--	--	0.00076 U	0.0038 U	0.00076 U	0.0015 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	DET	0.00076 U	--	--	--	--	--
A12-B6	A12-B6-7-8	08/14/19	Exploration	7 - 8	Present	--	**700 J**	--	--	0.0010 U	0.0050 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	--	--	--	--	--
A12-B6	A12-B6-9-10	08/14/19	Exploration	9 - 10	Present	--	5.0 U	--	--	0.00095 U	0.0048 U	0.00095 U	0.0019 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	ND	0.00095 U	--	--	--	--	--
A12-B7	A12-B7-5-6	08/14/19	Exploration	5 - 6	Present	--	5.3 U	--	--	0.00089 U	0.0045 U	0.00089 U	0.0018 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	ND	0.00089 U	--	--	--	--	--
A12-B7	A12-B7-7-8	08/14/19	Exploration	7 - 8	Present	--	4.8 U	--	--	0.00081 U	0.0040 U	0.00081 U	0.0016 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	ND	0.00081 U	--	--	--	--	--
A12-B7	A12-B7-9-10	08/14/19	Exploration	9 - 10	Present	--	4.4 U	--	--	0.00078 U	0.0039 U	0.00078 U	0.0016 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	ND	0.00078 U	--	--	--	--	--
A12-B8	A12-B8-1-2	08/14/19	Exploration	1 - 2	Present	--	5.8 U	26 U	52 U	0.0011 U	0.0054 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	0.0052 U	10 U	0.52 U	**6.3**	--
A12-B8	A12-B8-5-6	08/14/19	Exploration	5 - 6	Present	--	4.7 U	--	--	0.00085 U	0.0042 U	0.00085 U	0.0017 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	ND	0.00085 U	--	--	--	--	--
A12-B8	A12-B8-7-8	08/14/19	Exploration	7 - 8	Present	--	5.5 U	--	--	0.0012 U	0.0058 U	0.0012 U	0.0023 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	0.0012 U	--	--	--	--	--
A12-B8	A12-B8-8-9	08/14/19	Exploration	8 - 9	Present	--	4.9 U	--	--	0.00095 U	0.0048 U	0.00095 U	0.0019 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	ND	0.00095 U	--	--	--	--	--
A12-B9	A12-B9-1-2	08/14/19	Exploration	1 - 2	Present	--	5.6 U	26 U	**67**	0.0011 U	0.0056 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	0.0051 U	10 U	0.51 U	5.1 U	--
A12-B9	A12-B9-5-6	08/14/19	Exploration	5 - 6	Present	--	5.2 U	--	--	0.0011 U	0.0054 U	0.0011 U	0.0021 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	ND	0.0011 U	--	--	--	--	--
A12-B9	A12-B9-7-8	08/14/19	Exploration	7 - 8	Present	--	6.4 U	--	--	0.0012 U	0.0059 U	0.0012 U	0.0024 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	0.0012 U	--	--	--	--	--
A12-B9	A12-B9-8-9	08/14/19	Exploration	8 - 9	Present	--	4.5 U	--	--	0.00093 U	0.0047 U	0.00093 U	0.0019 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	0.00093 U	ND	0.00093 U	--	--	--	--	--
UG-MW27S	DUP1-20160823	08/23/16	Exploration	0 - 1	Present	--	--	--	--	--	--	--	--	--	--	0.00098 U	0.00098 U	--	--	ND	--	--	--	--	--	--
UG-MW27S	UG-MW27S-0-1	08/23/16	Exploration	0 - 1	Present	--	--	--	--	--	--	--	--	--	--	0.00097 U	0.00097 U	--	--	ND	--	--	--	--	--	--
UG-MW27S	UG-MW27S-6-7	08/23/16	Exploration	6 - 7	Present	--	--	--	--	--	--	--	--	--	--	0.00097 U	0.00097 U	--	--	ND	--	--	--	--	--	--
UG-MW27S	UG-MW27S-14-15	08/23/16	Exploration	14 - 15	Present	--	--	--	--	--	--	--	--	--	--	0.0011 U	0.0011 U	--	--	ND	--	--	--	--	--	--
UG-MW27S	UG-MW27S-25.5-26.5	08/23/16	Exploration	25.5 - 26.5	Present	--	--	--	--	--	--	--	--	--	--	0.00085 U	0.00085 U	--	--	ND	--	--	--	--	--	--
UG-MW27S	UG-MW27S-26.5-27.5	08/23/16	Exploration	26.5 - 27.5	Present	--	--	--	--	--	--	--	--	--	--	0.00094 U	0.00094 U	--	--	ND	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UG-MW27S	UG-MW27S-29.5-30.5	08/23/16	Exploration	29.5 - 30.5	Present	--	--	--	--	--	--	--	--	--	--	0.0012 U	0.0012 U	--	--	ND	--	--	--	--	--	--
19th and Fawcett Parking Lot Capital Project																										
PAR-CONF-2	CONF-2-20200128	01/28/20	Confirmation	0 - 0	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0082 U	0.0062 U	12 U	0.61 U	**9.4**	--
PAR-CONF-3	CONF-3-20200210	02/10/20	Confirmation	0 - 0	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.011**	**0.11**	11 U	0.57 U	**23**	--

Notes:

[1] Sample locations are shown on Figures 10-4 through 10-6. Location identification nomenclature was added to select wells as necessary. For example PAR- was added to PAR-CONF-2.

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical results is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

[4] Benzene may have been analyzed as full volatile organic compound (VOC) method and/or BTEX only. The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[5] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[6] Naphthalene may have been analyzed as a VOC, polycyclic aromatic hydrocarbon (PAH) and/or semi-volatile organic compound (SVOC). The lowest PQL or the greatest detected concentration is shown.

[7] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[8] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[9] Soil PCUL is based on the lowest value for protection of direct contact, groundwater as drinking water within the saturated zone and adjusted for practical quantitation limit (PQL) and Natural Background (see Tables 3-1 and 3-2).

[10] Soil screening level based on Ecology's Vapor Instruction Guidance (Publication No. 09-09-047; see Table 3-6).

-- = not tested

1,2,4-TMB = 1,2,4-trimethylbenzene

1,3,5-TMB = 1,3,5-trimethylbenzene

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

DET = detected

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons

J = estimated value by laboratory

mg/kg = milligram per kilogram

MTBE = methyl tert-butyl ether

ND = not DET

NE = not established

TPH-G, -D, -O = Total Petroleum Hydrocarbons -Gasoline, -Diesel, -Oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

U = analyte was ND at or greater than the listed reporting limit

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

Italic font type indicates the non-detect result is greater than the PCUL.

Gray text indicates that soil represented by the sample has been removed and that the sample result no longer represents current conditions.

Shading indicates that the DET concentration is greater than the PCUL.

Shading indicates that the DET concentration is greater than the screening level for vapor intrusion and/or the PCUL.

Table 10-5

Summary of Groundwater Chemical Analytical Results - Kelly

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																					
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs								Metals					
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
Supplemental Investigations Under the 1997 Agreed Order																												
UG-MW17	UG-MW17-051509	05/15/09	Qvi	Permanent	n/a	n/a	--	**162**	238 U	476 U	0.200 U	0.200 U	0.200 U	0.750 U	0.200 U	0.500 U	*0.200 U*	0.200 U	1.00 U	0.500 U	DET	2.50 U	--	--	--	--	--	--
UG-MW16	UG-MW16-051509	05/15/09	Qvi	Permanent	n/a	n/a	--	**128**	236 U	472 U	0.200 U	0.200 U	0.200 U	0.750 U	0.200 U	0.500 U	*0.200 U*	0.200 U	1.00 U	0.500 U	DET	2.50 U	--	--	--	--	--	--
1F-B7	1F-B7-W	06/11/13	Qvi	Temporary	n/a	n/a	--	100 U	260 U	410 U	0.20 U	1.0 U	0.20 U	0.40 U	*0.20 U*	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	0.095 U	**0.0078**	3.0 U	--	1.0 U	--	--
1F-B5	1F-B5-W	06/12/13	Qvi	Temporary	n/a	n/a	--	100 U	**460**	**420**	0.20 U	1.0 U	0.20 U	0.40 U	*0.20 U*	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	0.10 U	0.00755 U	3.0 U	--	1.0 U	--	0.093 U
1F-B3	1F-B3-W	06/12/13	Qvi	Temporary	n/a	n/a	--	100 U	250 U	410 U	1.0 U	5.0 U	1.0 U	2.0 U	*1.0 U*	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	0.10 U	0.00755 U	3.0 U	--	1.0 U	--	0.048 U
UG-MW16	UG-MW16-130617	06/17/13	Qvi	Permanent	9.27	141.72	--	--	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	0.048 U
UG-MW17	UG-MW17-130617	06/17/13	Qvi	Permanent	3.72	151.74	--	--	--	--	2.0 U	10 U	2.0 U	4.0 U	2.0 U	2.0 U	*2.0 U*	2.0 U	2.0 U	2.0 U	DET	10 U	--	--	--	--	--	0.051 U
UG-MW27	UG-MW27-130702	07/02/13	Qva	Permanent	23.05	123.45	--	100 U	260 U	410 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	0.10 U	0.00755 U	--	3.3 U	--	1.1 U	--
UG-MW31	UG-MW31-130904	09/04/13	Qvi	Permanent	n/a	n/a	--	100 U	260 U	420 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	0.094 U	0.0071 U	--	3.3 U	--	1.1 U	--
2016 Agreed Order Investigation																												
A9-MW1D	A9-MW1D-161205	12/05/16	Qva	Permanent	7.46	148.61	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
A9-MW1D	A9-MW1D-20190307	03/07/19	Qva	Permanent	7.20	148.87	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
A9-MW1D	A9-MW1D-190911	09/11/19	Qva	Permanent	8.28	147.79	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A9-MW1D	A9-MW1D-200319	03/19/20	Qva	Permanent	7.44	148.63	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A9-MW1D	A9-MW1D-200909	09/09/20	Qva	Permanent	8.43	147.64	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A9-MW1S	A9-MW1S-161207	12/07/16	Qvi	Permanent	9.61	146.21	--	100 U	--	--	--	--	--	--	--	--	*1.0 U*	1.0 U	--	--	DET	--	--	--	--	--	--	--
A9-MW1S	A9-MW1S-20190307	03/07/19	Qvi	Permanent	9.84	145.98	--	100 U	--	--	--	--	--	--	--	--	*1.0 U*	1.0 U	--	--	DET	--	--	--	--	--	--	--
A9-MW1S	A9-MW1S-190911	09/11/19	Qvi	Permanent	10.98	144.84	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
A9-MW1S	A9-MW1S-200319	03/19/20	Qvi	Permanent	9.82	146.00	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
A9-MW1S	A9-MW1S-200909	09/09/20	Qvi	Permanent	10.71	145.11	--	100 U	--	--	0.40 U	2.0 U	0.40 U	0.80 U	0.40 U	0.40 U	*0.40 U*	0.40 U	0.40 U	0.40 U	DET	2.0 U	--	--	--	--	--	--
A11-MW9D	A11-MW9D-20190521	05/21/19	Qva	Permanent	6.24	152.53	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW9D	A11-MW9D-190916	09/16/19	Qva	Permanent	7.21	151.56	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW9D	A11-MW9D-200326	03/26/20	Qva	Permanent	6.14	152.63	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW9D	A11-MW9D-200908	09/08/20	Qva	Permanent	6.90	151.87	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW9S	A11-MW9S-161206	12/06/16	Qvi	Permanent	6.05	152.84	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
A11-MW9S	A11-MW9S-181002	10/02/18	Qvi	Permanent	7.19	151.70	--	--	--	--	--	--	--	--	--	--	*0.40 U*	0.40 U	--	--	DET	--	--	--	--	--	--	--
A11-MW9S	A11-MW9S-20190307	03/07/19	Qvi	Permanent	6.11	152.78	--	--	--	--	--	--	--	--	--	--	*0.40 U*	0.40 U	--	--	DET	--	--	--	--	--	--	--
A11-MW9S	A11-MW9S-190916	09/16/19	Qvi	Permanent	6.64	152.25	--	--	--	--	0.40 U	2.0 U	0.40 U	0.80 U	0.40 U	0.40 U	*0.40 U*	0.40 U	0.40 U	0.40 U	DET	2.0 U	--	--	--	--	--	--
A11-MW9S	A11-MW9S-200326	03/26/20	Qvi	Permanent	5.69	153.20	--	--	--	--	*10 U*	50 U	10 U	20 U	10 U	10 U	*10 U*	*10 U*	10 U	10 U	DET	50 U	--	--	--	--	--	--
A11-MW9S	A11-MW9S-200908	09/08/20	Qvi	Permanent	7.11	151.78	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
UG-MW16	UG-MW16-161206	12/06/16	Qvi	Permanent	9.21	141.78	--	100 U	--	--	--	--	--	--	--	--	*1.0 U*	1.0 U	--	--	DET	--	--	--	--	--	1.1 U	--
UG-MW16	UG-MW16-20190307	03/07/19	Qvi	Permanent	9.21	141.78	--	100 U	--	--	--	--	--	--	--	--	*1.0 U*	1.0 U	--	--	DET	--	--	--	--	--	1.0 U	--
UG-MW16	UG-MW16-190911	09/11/19	Qvi	Permanent	9.52	141.47	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	3.0 U	3.3 U	1.0 U	1.1 U	--
UG-MW16	UG-MW16-200320	03/20/20	Qvi	Permanent	9.25	141.74	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
UG-MW16	UG-MW16-200904	09/04/20	Qvi	Permanent	9.61	141.38	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
UG-MW17	UG-MW17-161207	12/07/16	Qvi	Permanent	3.33	152.13	--	100 U	--	--	--	--	--	--	--	--	*2.0 U*	2.0 U	--	--	DET	--	--	--	--	--	1.0 U	--
UG-MW17	UG-MW17-20190307	03/07/19	Qvi	Permanent	3.38	152.08	--	100 U	--	--	--	--	--	--	--	--	*2.0 U*	2.0 U	--	--	DET	--	--	--	--	1.0 U	1.0 U	--
UG-MW17	UG-MW17-190911	09/11/19	Qvi	Permanent	4.41	151.05	--	100 U	--	--	2.0 U	10 U	2.0 U	4.0 U	2.0 U	2.0 U	*2.0 U*	2.0 U	2.0 U	2.0 U	DET	10 U	--	3.0 U	3.3 U	1.0 U	1.1 U	--
UG-MW17	DUP6-200320	03/20/20	Qvi	Permanent	n/a	n/a	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
UG-MW17	UG-MW17-200320	03/20/20	Qvi	Permanent	3.24	152.22	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
UG-MW17	DUP0-200904	09/04/20	Qvi	Permanent	n/a	n/a	--	100 U	--	--	2.0 U	10 U	2.0 U	4.0 U	2.0 U	2.0 U	*2.0 U*	2.0 U	2.0 U	2.0 U	DET	10 U	--	--	--	--	--	--
UG-MW17	UG-MW17-200904	09/04/20	Qvi	Permanent	4.49	150.97	--	100 U	--	--	2.0 U	10 U	2.0 U	4.0 U	2.0 U	2.0 U	*2.0 U*	2.0 U	2.0 U	2.0 U	DET	10 U	--	--	--	--	--	--
UG-MW27	UG-MW27-161207	12/07/16	Qva	Permanent	22.70	126.58	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
UG-MW27	UG-MW27-20190306	03/06/19	Qva	Permanent	22.87	125.81	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
UG-MW27	UG-MW27-091019	09/10/19	Qva	Permanent	23.35	125.33	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW27	UG-MW27-200303	03/03/20	Qva	Permanent	22.90	125.78	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW27	UG-MW27-200910	09/10/20	Qva	Permanent	23.30	125.38	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
UG-MW27S	UG-MW27S-161207	12/07/16	Qvi	Permanent	14.58	134.19	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
UG-MW27S	UG-MW27S-20190306	03/06/19	Qvi	Permanent	14.62	134.15	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
UG-MW27S	UG-MW27S-091019	09/10/19	Qvi	Permanent	14.80	133.97	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
UG-MW27S	UG-MW27S-200304	03/04/20	Qvi	Permanent	14.49	134.28	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
UG-MW27S	UG-MW27S-200910	09/10/20	Qvi	Permanent	14.72	134.05	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
UG-MW31	UG-MW31-161206	12/06/16	Qvi	Permanent	5.15	138.20	--	100 U	--	--	--	--	--	--	--	--	*0.40 U*	0.40 U	--	--	DET	--	--	--	--	--	--	--
UG-MW31	UG-MW31-20190308	03/08/19	Qvi	Permanent	5.33	137.59	--	100 U	--	--	--	--	--	--	--	--	*0.40 U*	0.40 U	--	--	DET	--	--	--	--	--	--	--
UG-MW31	UG-MW31-190911	09/11/19	Qvi	Permanent	5.68	137.24	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--
UG-MW31	DUP-3-200305	03/05/20	Qvi	Permanent	n/a	n/a	--	100 U	--	--	0.40 U	2.0 U	0.40 U	0.80 U	0.40 U	0.40 U	*0.40 U*	0.40 U	0.40 U	0.40 U	DET	2.0 U	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																			
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs								Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
UG-MW31	UG-MW31-200305	03/05/20	Qvi	Permanent	5.39	137.53	--	100 U	--	--	0.40 U	2.0 U	0.40 U	0.80 U	0.40 U	0.40 U	*0.40 U*	0.40 U	0.40 U	0.40 U	**DET**	2.0 U	--	--	--	--	--	--
UG-MW31	DUP-1-200904	09/04/20	Qvi	Permanent	n/a	n/a	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
UG-MW31	UG-MW31-200904	09/04/20	Qvi	Permanent	5.92	137.00	--	100 U	--	--	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	**DET**	5.0 U	--	--	--	--	--	--
Health Center Capital Project																												
HS_TW1	TW1-082311-W	08/23/11	Qvi	Temporary	n/a	n/a	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 10-4 through 10-6. Location identification nomenclature was added to select wells as necessary (for example HS- was added to HS_TW1).

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical result list is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 1,000 µg/L.

[4] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[5] Naphthalene may have been analyzed as a volatile organic compound (VOC), polycyclic aromatic hydrocarbon (PAH), and/or semi-volatile organic compound (SVOC). The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[6] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[7] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[8] Groundwater PCUL is based on the lowest value for protection of groundwater as drinking water, adjusted for PQL (see Table 3-3).

[9] Groundwater screening level referenced from Ecology's CLARC (Cleanup Levels and Risk Calculation) Table (Excel) dated January 2023 and Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-5 and 3-6).

-- = not tested
µg/L = microgram per liter
1,2,4-TMB = 1,2,4-trimethylbenzene
1,3,5-TMB = 1,3,5-trimethylbenzene
BTEX = benzene, toluene, ethylbenzene and xylenes
CVOCs = chlorinated volatile organic compounds
DET = detected
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons
J = estimated value by laboratory
MTBE = methyl tert-butyl ether
n/a = not available
Qva = Vashon advance outwash
Qvi = Vashon ice-contact deposits
TOC = top of casing
TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil
TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification
U = analyte was ND at or greater than the listed reporting limit.
Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.
Italic font type indicates the non-detect result is greater than the PCUL.
Shading indicates that the detected concentration is greater than the PCUL.
Shading indicates that the detected concentration is greater than the screening level for vapor intrusion and/or the PCUL.

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-01 Kelly Site Plan_Date Exported: 05/25/23_by tdeome

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Kelly Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint
- Kelly Site - Area of Soil and/or Groundwater with One or More Contaminants of Concern Exceeding the Proposed Cleanup Level (PCUL)

W S N E

30 0 30

Feet

Notes:

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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Overview
Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-1

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-02 Kelly Historic Site Features_Date Exported: 05/25/23_by tdeome

Legend

- Kelly Area of Concern
- Parcel Boundary and Number (Historic)
- Historic Building Footprint/Feature
- Existing Building Footprint (with Former Operations)

W N S E

30 0 30

Feet

Historical Features and Land Use
Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-2

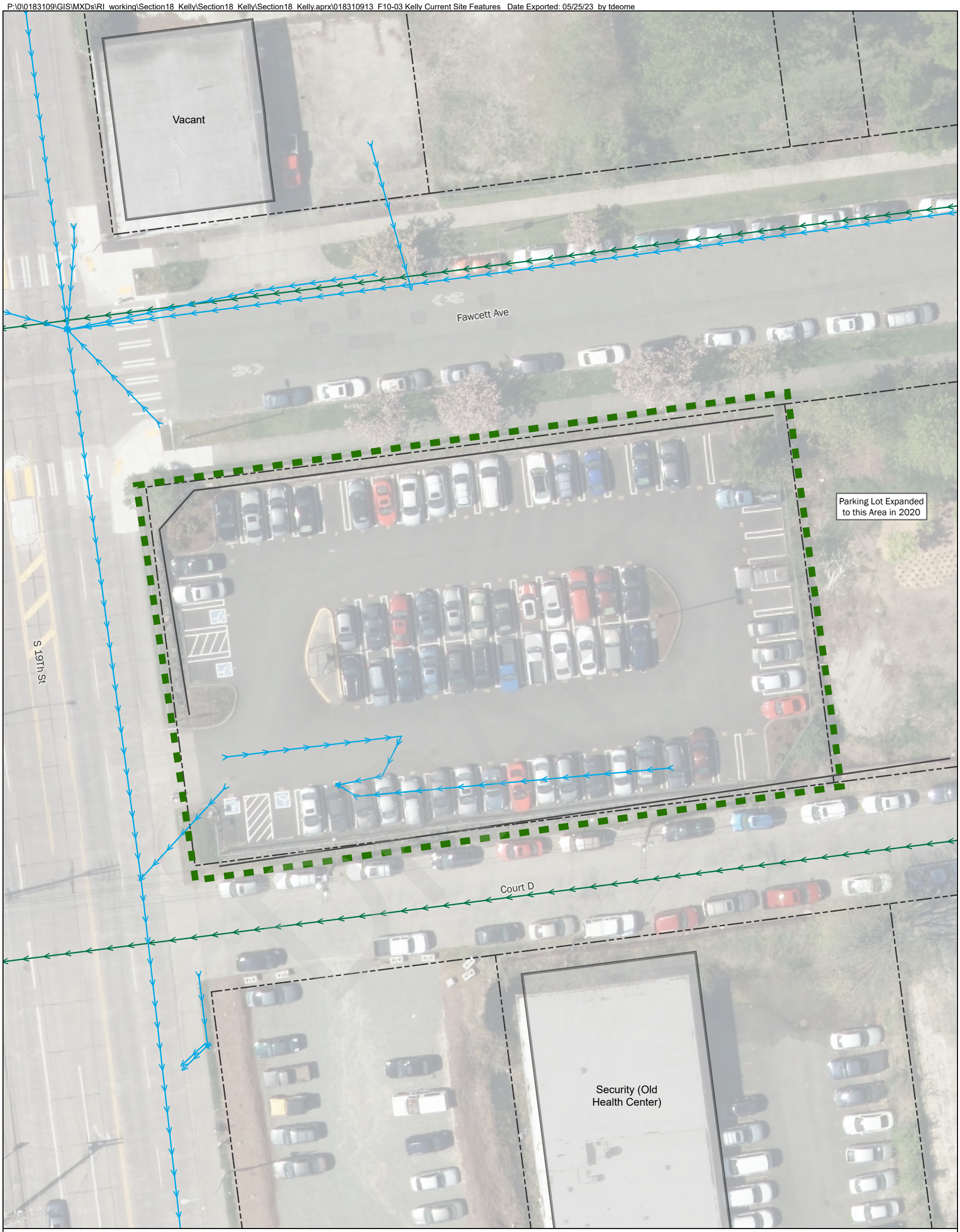
Notes:

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.

Data Source: Aerial Imagery provided by Tacoma, 2002

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

P:\0\0183109\GIS\MXDs\RI working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-03 Kelly Current Site Features Date Exported: 05/25/23 by tdeome



Legend

- Kelly Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Retaining Wall

W N S E

30 0 30

Feet

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

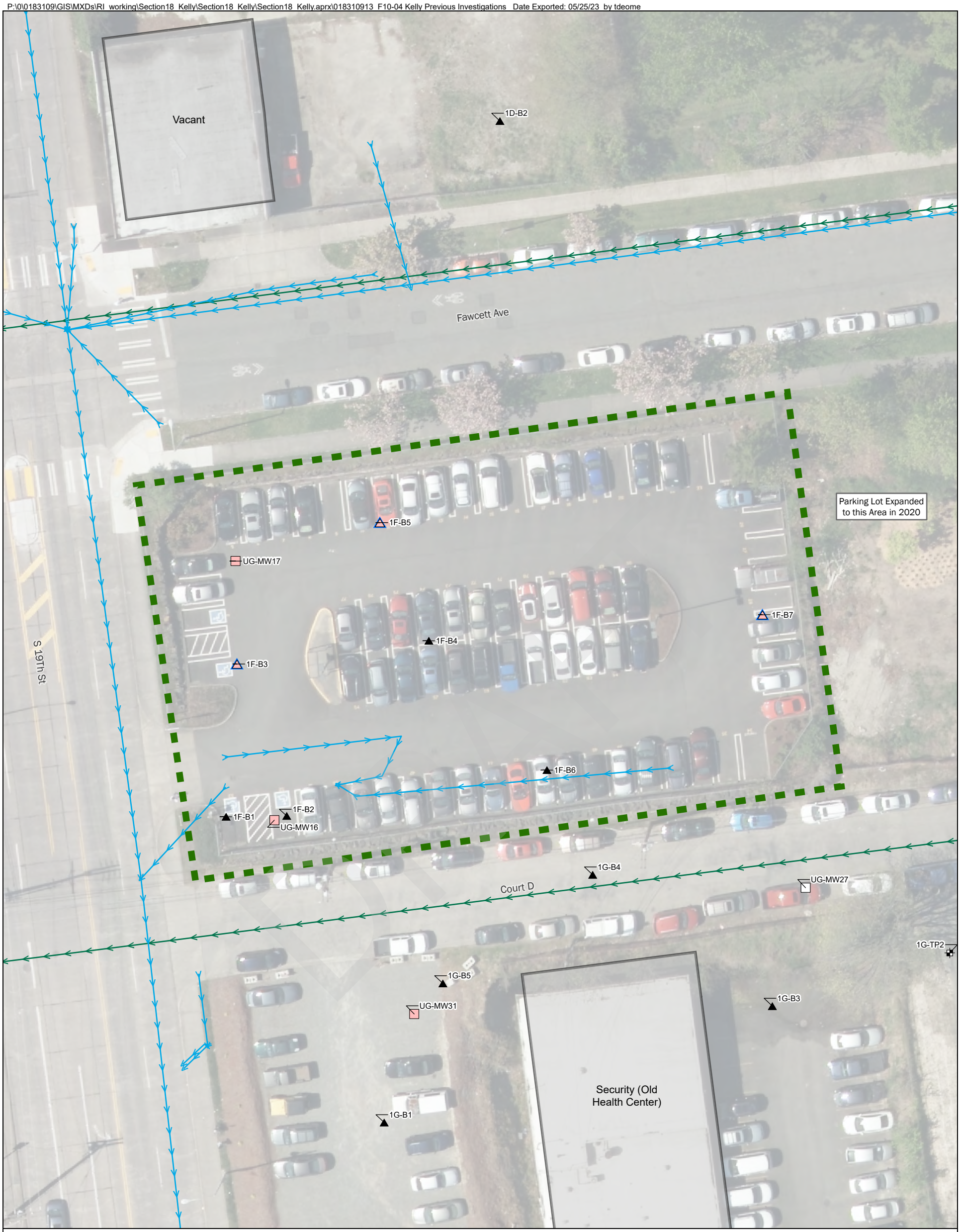
Current Features and Utility Infrastructure Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-3

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-04 Kelly Previous Investigations_Date Exported: 05/25/23_by tdeome



Legend

- Boring
- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Test Plt
- Kelly Area of Concern
- Existing Building Footprint
- Active Sanitary Sewer Utility
- Active Stormwater Utility

W N S E

30 0 30

Feet

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

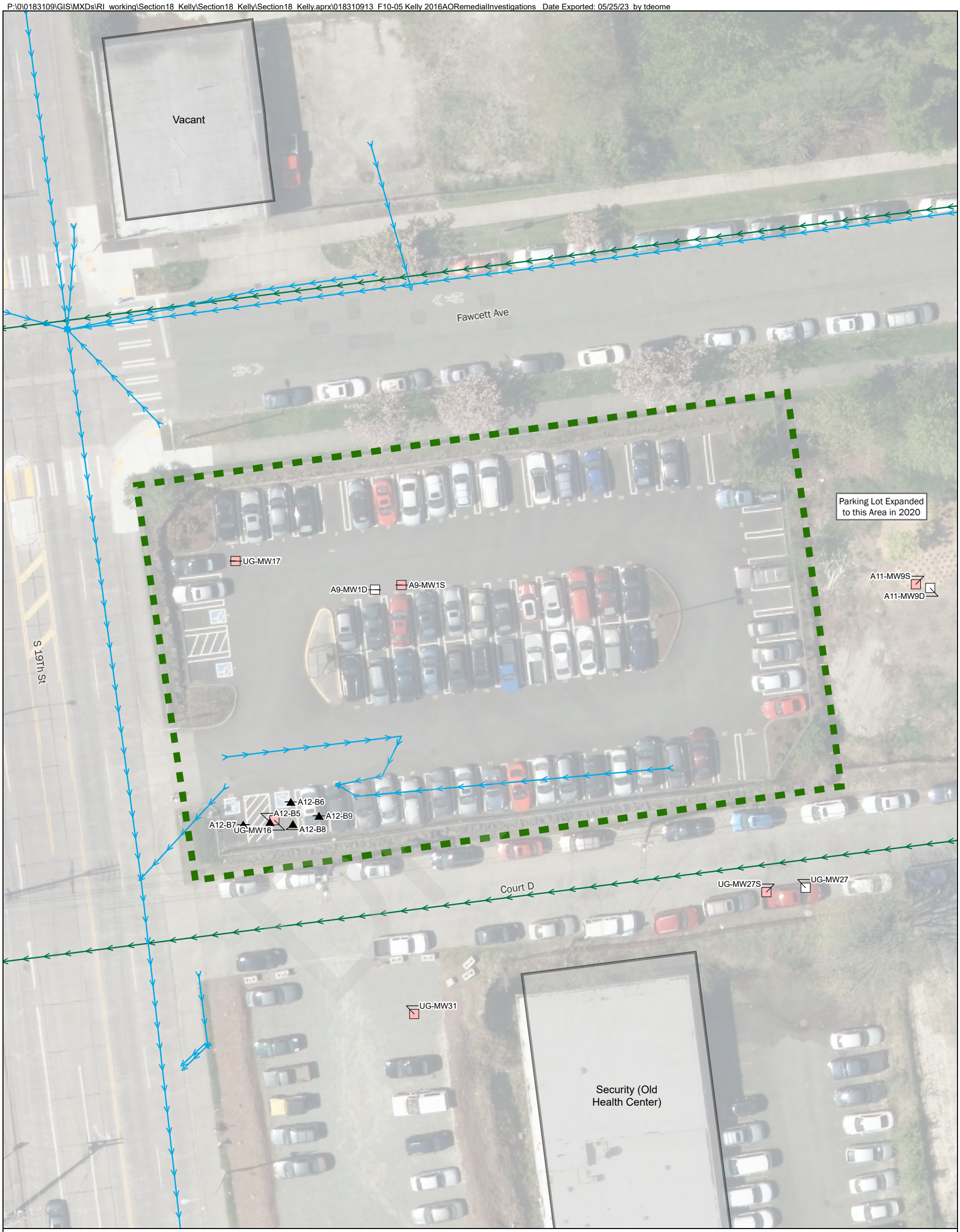
Previous Investigations
Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-4

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-05 Kelly 2016AORemedialInvestigations Date Exported: 05/25/23 by tdeome



Legend

- ▲ Boring
- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Kelly Area of Concern
- Existing Building Footprint

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W N S E

30 0 30

Feet

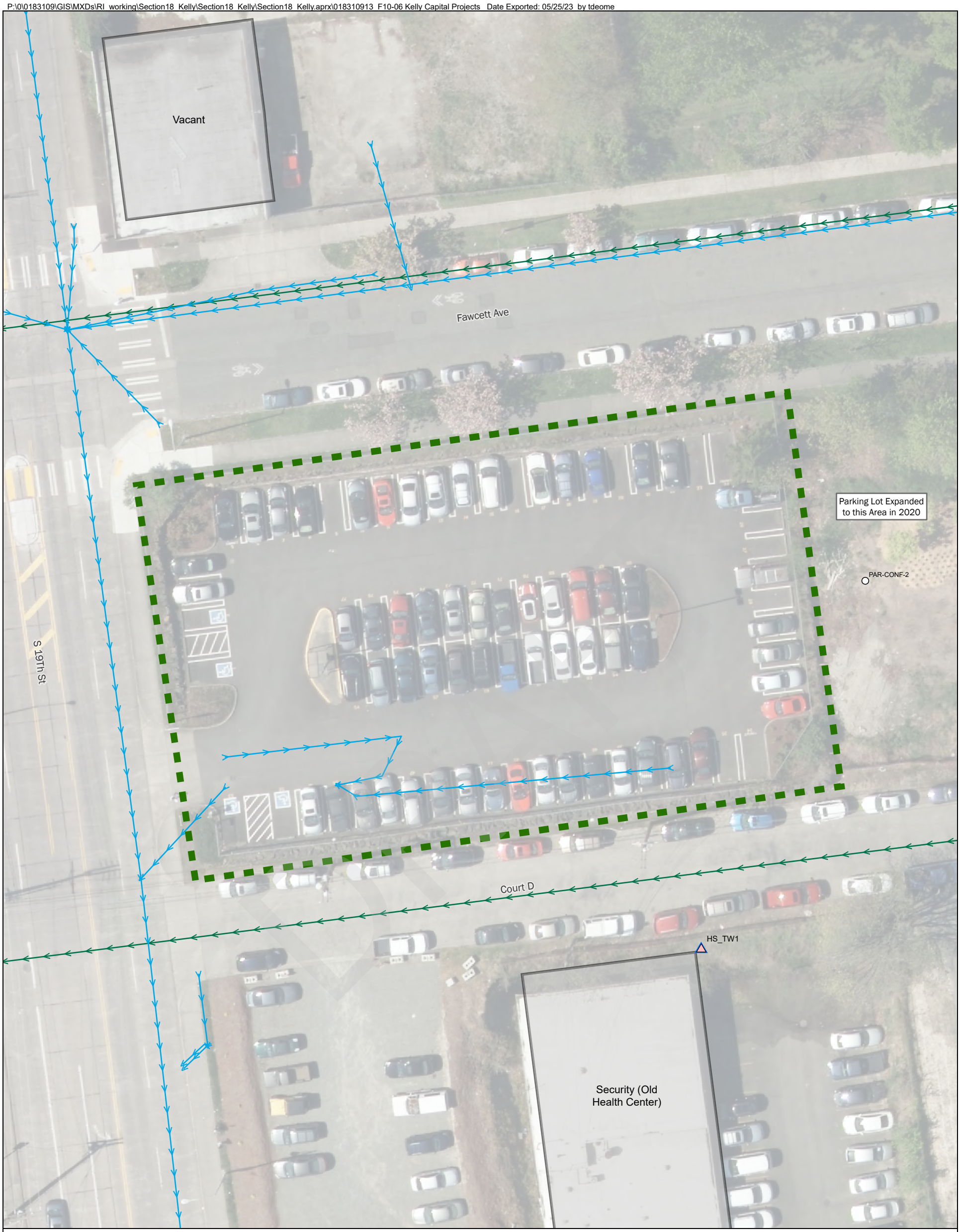
2016 Agreed Order Remedial Investigation Locations
Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-5

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-06 Kelly Capital Projects_Date Exported: 05/25/23_by tdeome



Legend

- Boring with Grab Groundwater Sample in Qvi Aquifer
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Kelly Area of Concern
- Existing Building Footprint

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

W N S E

30 0 30

Feet

Capital Projects
Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-6

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-07 Kelly TPHG Soil_Date Exported: 05/25/23_by tdeome

Legend

- Boring
- Test Pit
- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Cross Section
- Kelly Area of Concern
- Existing Building Footprint

W N S E

30 0 30

Feet

Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 30 mg/kg milligram per kilogram (mg/kg) – See Section Tables
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.New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-G in Soil
Kelly

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-7

P:\0\0183109\GIS\MXDs\RI_working\Section18_Kelly\Section18_Kelly\Section18_Kelly.aprx\018310913_F10-08 Kelly TPHG GW_Date Exported: 05/25/23_by tdeome

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Cross Section
- Kelly Area of Concern
- Existing Building Footprint

W N S E

30 0 30

Feet

Summary of TPH-G in the Qvi/Qva Aquifer Kelly

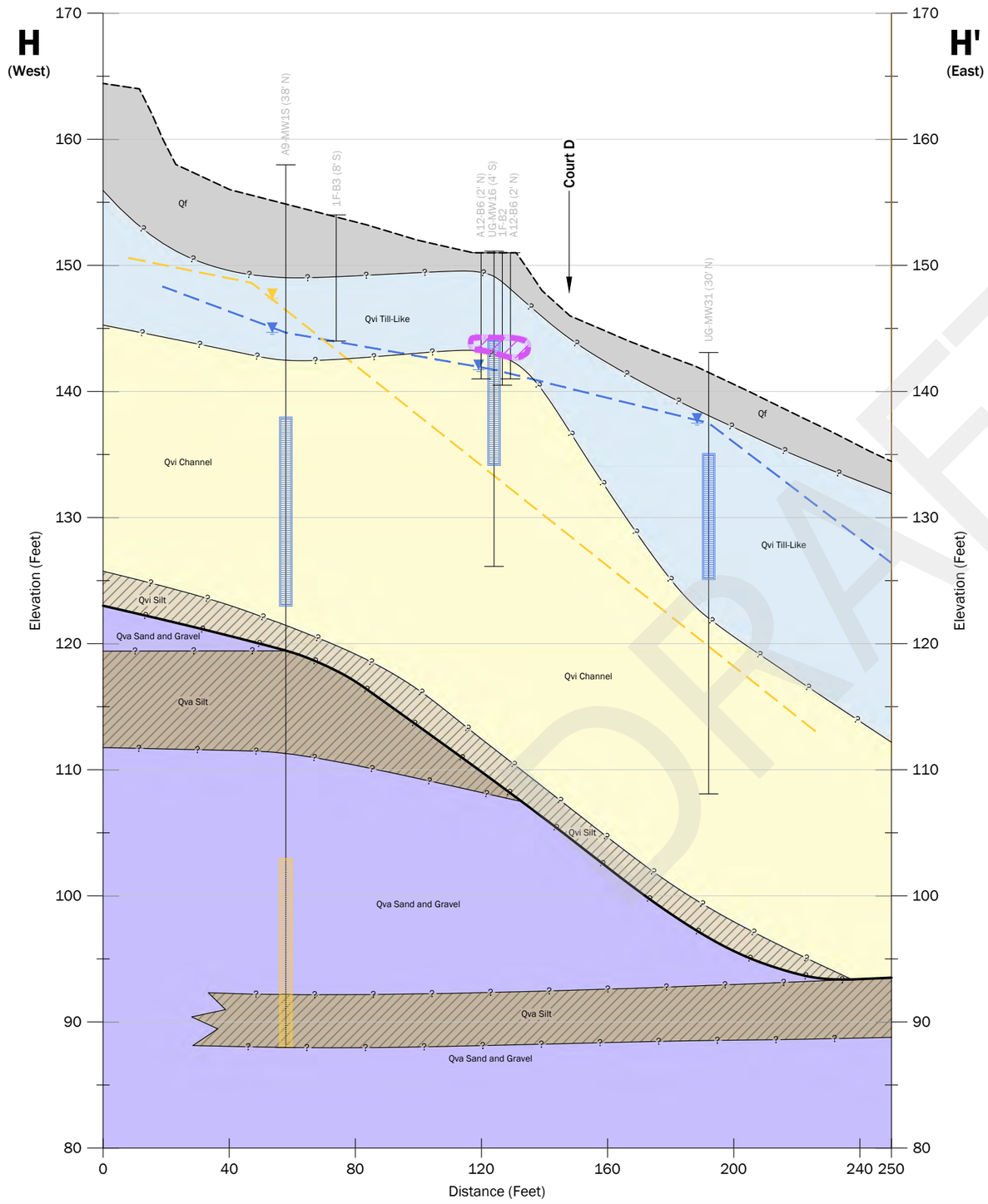
University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-8

Notes:
TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio
Basis for Screening = 800 micrograms per liter (µg/L) – See Section Tables
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.New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet



Legend

- UG-MW31 (Offset 91' N) — Borehole Number (Offset Distance and Direction)
- Qvi Aquifer Water Level
- Qva Aquifer Water Level
- Qvi Aquifer Well Screen
- Qva Aquifer Well Screen
- Inferred Soil Contact Line
- Contact Between Qvi and Qva Units
- Existing Ground Surface
- Existing Building Location
- Qvi Aquifer Potentiometric Groundwater Surface (April 2021)
- Qva Aquifer Potentiometric Groundwater Surface (April 2021)
- Approximate Extent of Petroleum-Related Contaminated Soil

Stratigraphic Units

Recent Deposits (Qf)
- Fill (Qf)

Ice-Contact Deposits (Qvi)
- Silty Gravel with Sand (Qvi Till-Like Deposits)
- Oxidized Sand and Gravel (Qvi Channel Deposits)
- Silt and Silty Gravel (Qvi Silt Deposits)

Advance Outwash Deposits (Qva)
- Silt to Sandy Silt (Qva Silt Deposits)
- Sand and Gravel (Qva Sand and Gravel Deposits)

Note

1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.

Datum: NGVD29

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

40 0 40
Horizontal Scale in Feet

10 0 10
Vertical Scale in Feet
Vertical Exaggeration: 4X

Summary of Petroleum-Related Contamination in Soil and Groundwater Cross Section H-H'

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 10-9

Table 11-1

Soil Investigation Summary - Shaub-Ellison

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]														
							Petroleum Hydrocarbons				VOCs										
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
Pre-1997 Agreed Order Investigation and Remedial Action																					
SH-HA1	07/17/95	AGI	Exploration	Hand Auger	49	6.5	X		X	X											
SH-HA2	07/17/95	AGI	Exploration	Hand Auger	49	5.3	X														
SH-HA3	07/17/95	AGI	Exploration	Hand Auger	49	5.2	X														
SH-HA4	07/17/95	AGI	Exploration	Hand Auger	49	5.3	X														
SH-HA5	07/17/95	AGI	Exploration	Hand Auger	49	2.5	X														
SH-Hoist	07/31/95	AGI	Confirmation	Grab	49	--	X														
SH-MW1	07/23/93	AGI	Exploration	HSA	49	23	X	X	X		X										
SH-MW2	07/23/93	AGI	Exploration	HSA	49	20.5	X	X	X		X										
SH-MW3	07/23/93	AGI	Exploration	HSA	48.5	28	X														
SH-MW4	07/23/93	AGI	Exploration	HSA	63	29	X	X	X		X										
SH-MW5	07/23/93	AGI	Exploration	HSA	63	29	X														
SH-S1	07/19/95	AGI	Confirmation	Grab	64	--			X	X											
SH-S2	07/20/95	AGI	Confirmation	Grab	64	--			X	X											
SH-S3	07/20/95	AGI	Confirmation	Grab	64	--			X	X											
SH-S4	07/20/95	AGI	Confirmation	Grab	49	--	X				X	X	X	X							
SH-S5	07/29/95	AGI	Confirmation	Grab	49	--	X				X	X	X	X							
SH-S5A	07/29/95	AGI	Confirmation	Grab	49	--			X	X											
SH-S6	07/29/95	AGI	Confirmation	Grab	49	--	X				X	X	X	X							
SH-S7	07/29/95	AGI	Confirmation	Grab	49	--		X	X	X	X						X				
SH-S8	07/29/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S9	07/29/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S10	07/29/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S11	07/29/95	AGI	Confirmation	Grab	49	--	X														
SH-S12	07/31/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S13	08/04/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S15	08/04/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S16	08/04/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S17	08/04/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S18	08/04/95	AGI	Confirmation	Grab	49	--		X	X	X	X						X				
SH-S20	08/04/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S21	08/07/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S22	08/07/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S23	08/07/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S24	08/08/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S25	08/08/95	AGI	Confirmation	Grab	49	--		X	X	X	X										
SH-S26	08/08/95	AGI	Confirmation	Grab	49	--		X	X	X	X										

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]													
							Petroleum Hydrocarbons				VOCs									
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
SH-S28	08/08/95	AGI	Confirmation	Grab	49	--		X	X	X	X									
SH-S29	08/08/95	AGI	Confirmation	Grab	49	--		X	X	X	X									
SH-S30	08/08/95	AGI	Confirmation	Grab	49	--		X	X	X	X									
SH-S31	08/09/95	AGI	Confirmation	Grab	49	--		X	X	X	X									
SH-S32	08/09/95	AGI	Confirmation	Grab	49	--		X	X	X	X									
SH-S33	08/09/95	AGI	Confirmation	Grab	49	--		X	X	X	X									
SH-SE-SS-2	04/07/94	AGI	Confirmation	Grab	50	--	X													
SH-SE-SS-3	04/07/94	AGI	Confirmation	Grab	50	--	X													
SH-SS1	05/25/93	AGI	Exploration	Hand Auger	64	1	X		X	X	X	X	X	X			X			
SH-SS2	05/25/93	AGI	Exploration	Hand Auger	64	1	X		X	X	X	X	X	X			X			
1997 Agreed Order Investigation																				
DMB-15	03/23/99	URS	Exploration	Direct Push	63	9		X	X	X	X				X	X				
DMB-16	03/23/99	URS	Exploration	Direct Push	64	9		X	X	X	X				X	X				
DMB-17	03/23/99	URS	Exploration	Direct Push	64	9		X	X	X	X				X	X				
PS-MW8	10/05/98	URS	Exploration	HSA	65	26		X	X	X	X									
SH-B1	08/26/98	URS	Exploration	Direct Push	62	15		X	X	X	X									
SH-B2	09/10/98	URS	Exploration	HSA	56	25		X	X	X	X									
SH-B3	09/10/98	URS	Exploration	HSA	55	23		X	X	X	X									
SH-GW3	09/20/99	URS	Exploration	Direct Push	47	28.5		X	X	X										
SH-MW6	09/25/98	URS	Exploration	HSA	49.16	29		X	X	X	X	X	X							
SH-MW7	09/15/98	URS	Exploration	HSA	48.94	31		X	X	X										
1997 Agreed Order Remedial Action - Shaub-Ellison																				
SH-R-1	08/29/06	GeoEngineers	Exploration	HSA	62	30		X	X	X	X									
SH-R-2	08/24/06	GeoEngineers	Exploration	HSA	62	30		X	X	X	X									
SH-R-3	08/19/05	GeoEngineers	Exploration	HSA	56	30		X	X	X	X									
SH-R-4	08/25/06	GeoEngineers	Exploration	HSA	56	30		X	X	X	X									
SH-R-5	08/26/06	GeoEngineers	Exploration	HSA	51	30		X	X	X	X									
2016 Agreed Order Investigation																				
A11-MW23D	06/24/19	GeoEngineers	Exploration	Sonic	63.60	70		X	X	X	X	X	X	X	X		X			
A11-MW23S	06/25/19	GeoEngineers	Exploration	Sonic	63.57	35		X	X	X	X	X	X	X	X		X			

Notes:

[1] Sample locations are shown on Figures 11-4 and 11-5. Location identification nomenclature was added to select wells as necessary (for example SH- was added to SH-R-1).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Shaub-Ellison are summarized in Table 11-4. Chemical analytical results associated with other AOCs and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

AGI = AGI Technologies

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

HSA = hollow stem auger

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 11-2

Groundwater Investigation Summary - Shaub-Ellison

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
Pre-1997 Agreed Order Investigation and Remedial Action																	
SH-MW1	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW2	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW2	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW3	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW4	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW5	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
1997 Agreed Order Investigation																	
BL-MW4	10/25/99	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW4	04/03/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW4	09/06/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
PS-GW3	08/26/98	URS	Temporary	Qva		X	X	X	X	X	X	X					
PS-GW5	09/16/99	URS	Temporary	Qva					X	X	X	X					
PS-MW8	10/23/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	01/13/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	04/20/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	09/09/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	04/07/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	09/06/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW9	11/02/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW9	04/03/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW9	09/06/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-B2	09/10/98	URS	Temporary	Qva		X	X	X	X								
SH-B3	09/10/98	URS	Temporary	Qva		X	X	X	X								
SH-GW1	08/27/98	URS	Temporary	Qva					X	X	X	X					
SH-GW2	08/27/98	URS	Temporary	Qva		X	X	X	X	X	X	X					
SH-GW3	09/20/99	URS	Temporary	Qva		X	X	X	X	X	X	X					
SH-GW4	09/20/99	URS	Temporary	Qva		X	X	X	X	X	X	X					
SH-MW6	10/26/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW6	01/12/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW6	01/12/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW6	04/19/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW6	09/08/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW7	10/26/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW7	01/12/99	URS	Permanent	Qva		X	X	X	X	X	X	X					

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
SH-MW7	04/19/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW7	09/08/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW7	04/03/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW7	09/06/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW8	10/26/99	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
SH-MW8	04/04/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
SH-MW8	09/07/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
Supplemental Investigations Under the 1997 Agreed Order																	
BL-MW4	07/08/13	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
PS-MW8	07/11/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW9	07/11/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW6	07/08/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
SH-MW7	07/08/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
1997 Agreed Order Remedial Action - Shaub-Ellison																	
PS-MW9	08/31/05	GeoEngineers	Permanent	Qva		X	X	X	X								
PS-MW9	11/17/10	GeoEngineers	Permanent	Qva		X	X	X	X								
PS-MW9	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW6	08/31/05	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW6	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	08/31/05	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	01/24/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	04/25/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	07/30/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	10/25/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	01/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	04/28/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	07/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	11/03/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	05/05/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	11/03/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	05/03/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	11/17/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW7	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-MW8	08/31/05	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	01/24/07	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	04/25/07	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	07/30/07	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	10/25/07	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	01/30/08	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	04/28/08	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
SH-MW8	07/30/08	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	11/03/08	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	05/05/09	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	11/03/09	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	05/03/10	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	11/17/10	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-MW8	05/10/11	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X								
SH-R-1	09/05/06	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-1	11/16/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-1	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	09/05/06	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	01/24/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	04/25/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	07/30/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	10/26/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	01/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	04/28/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	07/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	11/03/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	05/05/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	11/03/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	05/03/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	11/16/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-2	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	08/31/05	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	01/24/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	04/25/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	07/30/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	10/25/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	01/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	04/28/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	07/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	11/03/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	05/05/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	11/03/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	05/03/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	11/16/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-3	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-4	09/05/06	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-4	11/16/10	GeoEngineers	Permanent	Qva		X	X	X	X								

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
SH-R-4	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	09/05/06	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	01/24/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	04/25/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	07/30/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	10/26/07	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	01/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	04/28/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	07/30/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	11/03/08	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	05/05/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	11/03/09	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	05/03/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	11/17/10	GeoEngineers	Permanent	Qva		X	X	X	X								
SH-R-5	05/10/11	GeoEngineers	Permanent	Qva		X	X	X	X								
2016 Agreed Order Investigation																	
A11-MW23D	09/12/19	GeoEngineers	Permanent	Qva					X	X	X	X					
A11-MW23D	03/18/20	GeoEngineers	Permanent	Qva			X	X	X	X	X	X	X				
A11-MW23D	09/02/20	GeoEngineers	Permanent	Qva			X	X	X	X	X	X	X				
A11-MW23S	09/12/19	GeoEngineers	Permanent	Qvi/Qva					X	X	X	X					
A11-MW23S	03/18/20	GeoEngineers	Permanent	Qvi/Qva			X	X	X	X	X	X	X				
A11-MW23S	09/02/20	GeoEngineers	Permanent	Qvi/Qva			X	X	X	X	X	X	X				
BL-MW4	12/15/16	GeoEngineers	Permanent	Qvi/Qva		X				X	X	X					
BL-MW4	03/12/19	GeoEngineers	Permanent	Qvi/Qva		X				X	X	X					
BL-MW4	09/06/19	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW4	03/23/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X	X				X
BL-MW4	09/01/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X	X				
PS-MW8	12/21/16	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW8	03/13/19	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW8	09/12/19	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	03/20/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	09/02/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW9	12/21/16	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW9	03/14/19	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW9	09/12/19	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW9	03/26/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X	X				
PS-MW9	09/03/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X	X				
SH-MW6	12/21/16	GeoEngineers	Permanent	Qva		X				X	X	X					
SH-MW6	03/14/19	GeoEngineers	Permanent	Qva		X				X	X	X					
SH-MW6	09/12/19	GeoEngineers	Permanent	Qva		X			X	X	X	X					

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
SH-MW6	03/20/20	GeoEngineers	Permanent	Qva		X			X	X	X	X					
SH-MW6	09/03/20	GeoEngineers	Permanent	Qva		X			X	X	X	X					
SH-MW7	12/28/16	GeoEngineers	Permanent	Qva		X				X	X	X					
SH-MW7	03/14/19	GeoEngineers	Permanent	Qva		X				X	X	X					
SH-MW7	09/09/19	GeoEngineers	Permanent	Qva		X			X	X	X	X					
SH-MW7	03/20/20	GeoEngineers	Permanent	Qva		X			X	X	X	X					
SH-MW7	09/03/20	GeoEngineers	Permanent	Qva		X			X	X	X	X					
SH-MW8	12/20/16	GeoEngineers	Permanent	Qvi/Qva		X				X	X	X					
SH-MW8	03/12/19	GeoEngineers	Permanent	Qvi/Qva		X				X	X	X					
SH-MW8	09/16/19	GeoEngineers	Permanent	Qvi/Qva		X			X	X	X	X					
SH-MW8	03/23/20	GeoEngineers	Permanent	Qvi/Qva		X			X	X	X	X	X				
SH-MW8	09/17/20	GeoEngineers	Permanent	Qvi/Qva		X			X	X	X	X	X				

Notes:

[1] Sample locations are shown on Figures 11-4 and 11-5. Location identification nomenclature was added to select wells as necessary (for example SH- was added to SH-R-1).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Shaub-Ellison are summarized in Table 11-5. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

AGI = AGI Technologies
BTEX = benzene, toluene, ethylbenzene and xylenes
CVOCs = chlorinated volatile organic compounds
HSA = hollow stem auger
NGVD29 = National Geodetic Vertical Datum of 1929
PAHs = polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyl Aroclors
Qva = Vashon advance outwash
Qvi = Vashon ice-contact deposits
SVOCs = semi-volatile organic compounds
TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil
TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification
URS = United Research Services Corporation (formerly)
VOCs = volatile organic compounds

Table 11-3

Well Construction Details - Shaub-Ellison

University of Washington - Tacoma Campus

Tacoma, Washington

Well Identification[1]	Well Construction Date	Installed By	Ground Surface Elevation[2] (feet NGVD29)	Top of Casing Elevation (feet NGVD29)[2]	Top of Well Screen (feet bgs)	Bottom of Well Screen (feet bgs)	Top of Well Screen Elevation (feet NGVD29)	Bottom of Well Screen Elevation (feet NGVD29)	Lithology Across Well Screen Interval	Well Status	Well Type
Pre-1997 Agreed Order Investigation and Remedial Action											
SH-MW1	07/23/93	AGI	49	48.74	5	20	44	29	Qva	Decommissioned	Permanent
SH-MW2	07/23/93	AGI	49	48.55	5	20	44	29	Qva	Decommissioned	Permanent
SH-MW3	07/23/93	AGI	49	48.29	13	28	36	21	Qva	Decommissioned	Permanent
SH-MW4	07/23/93	AGI	63	62.41	18	29	44	34	Qva	Decommissioned	Permanent
SH-MW5	07/23/93	AGI	63	62.26	18	28	44	34	Qva	Decommissioned	Permanent
1997 Agreed Order Investigation											
BL-MW4	10/12/99	URS	48.0	47.80	11	31	37	17	Qvi/Qva	Existing	Permanent
PS-GW3	08/26/98	URS	66	--	11	13	55	53	Qva	Decommissioned	Temporary
PS-GW5	09/16/99	URS	67	--	23	25	44	42	Qva	Decommissioned	Temporary
PS-MW8	10/05/98	URS	65	64.84	11	26	54	39	Qva	Existing	Permanent
PS-MW9	10/25/99	URS	56	55.33	12	27	45	30	Qva	Existing	Permanent
SH-B2	09/10/98	URS	56	--	18	18	39	39	Qva	Decommissioned	Temporary
SH-B3	09/10/98	URS	55	--	18	18	37	37	Qva	Decommissioned	Temporary
SH-GW1	08/27/98	URS	48	--	8	11	40	37	Qva	Decommissioned	Temporary
SH-GW2	08/27/98	URS	48	--	8	11	40	37	Qva	Decommissioned	Temporary
SH-GW3	09/20/99	URS	47	--	23	26	24	21	Qva	Decommissioned	Temporary
SH-GW4	09/20/99	URS	47	--	23	26	24	21	Qva	Decommissioned	Temporary
SH-MW6	09/25/98	URS	49.16	48.82	14	29	35	20	Qva	Existing	Permanent
SH-MW7	09/15/98	URS	48.94	48.41	16	31	32	17	Qva	Existing	Permanent
SH-MW8	10/13/99	URS	48.05	47.85	10	30	38	18	Qvi/Qva	Existing	Permanent
1997 Agreed Order Remedial Action - Shaub-Ellison											
SH-R-3	08/19/05	GeoEngineers	55.90	55.13	12	29	43	26	Qva	Decommissioned	Permanent
SH-R-2	08/24/06	GeoEngineers	61.80	61.22	12	30	49	31	Qva	Decommissioned	Permanent
SH-R-4	08/25/06	GeoEngineers	55.50	54.99	12	30	43	25	Qva	Decommissioned	Permanent
SH-R-5	08/26/06	GeoEngineers	51.00	50.57	12	30	39	21	Qva	Decommissioned	Permanent
SH-R-1	08/29/06	GeoEngineers	62.20	61.78	12	30	50	32	Qva	Decommissioned	Permanent
2016 Agreed Order Investigation											
A11-MW23D	06/24/19	GeoEngineers	63.60	63.16	55	65	8	-2	Qva	Existing	Permanent
A11-MW23S	06/25/19	GeoEngineers	63.57	63.28	25	35	38	28	Qvi/Qva	Existing	Permanent

Notes:

[1] Well locations are shown on Figures 11-4 and 11-5. Location identification nomenclature was added to select wells as necessary (for example SH- was added to SH-R-1).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

AGI = AGI Technologies

bgs = below ground surface

NGVD29 = National Geodetic Vertical Datum of 1929 (NGVD29)

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

URS = United Research Services Corporation (formerly)

Table 11-4

Summary of Soil Chemical Analytical Results - Shaub-Ellison

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																				
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Pre-1997 Agreed Order Investigation and Remedial Action																										
SH-HA1	SH-HA1A @ 2	07/29/95	Exploration	6.5 - 6.5	Present	--	--	11 U	44 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-HA1	SH-HA1 @ 0.5	07/17/95	Exploration	5 - 5	Removed	D,O	--	160	680	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-HA2	SH-HA2 @ 0.8	07/29/95	Exploration	5.3 - 5.3	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-HA3	SH-HA3 @ 0.7	07/17/95	Exploration	5.2 - 5.2	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-HA4	SH-HA4 @ 0.8	07/17/95	Exploration	5.3 - 5.3	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-HA5	SH-HA5 @ 2.5	07/17/95	Exploration	2.5 - 2.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-Hoist	SH-HOIST @ 14	07/31/95	Confirmation	14 - 14	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW3	SH-B3-10	05/23/93	Exploration	10 - 10	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW1	SH-B1-10	05/23/93	Exploration	10 - 10	Removed	G,D	2,400	140	--	0.32	0.025 U	5.3	6.9	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW1	SH-B1-15	05/23/93	Exploration	15 - 15	Removed	G,D	1,300	28	--	*0.025 U*	0.025 U	2.9	3.4	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW2	SH-B2-10	05/23/93	Exploration	10 - 10	Removed	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW2	SH-B2-17.5	05/23/93	Exploration	17.5 - 17.5	Removed	G,D	1,500	160	--	*0.025 U*	0.025 U	3.1	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW3	SH-B3-17.5	05/23/93	Exploration	17.5 - 17.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW4	SH-B4 @ 20.5	05/28/93	Exploration	20.5 - 20.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW5	SH-B5 @ 3	06/01/93	Exploration	3 - 3	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW4	SH-B4 @ 28	05/28/93	Exploration	28 - 28	Historical	G,D	40	190	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW5	SH-B5 @ 20.5	06/01/93	Exploration	20.5 - 20.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S1	SH-S1 @ 2.5	07/19/95	Confirmation	2.5 - 2.5	Present	--	--	11 U	43 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S2	SH-S2 @ 2.5	07/20/95	Confirmation	2.5 - 2.5	Present	--	--	53	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S3	SH-S3 @ 2.5	07/20/95	Confirmation	2.5 - 2.5	Present	--	--	11 U	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S4	SH-S4 @ 4	07/20/95	Confirmation	4 - 4	Present	ND	--	--	--	*0.005 U*	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	*0.005 U*	--	0.010 U	ND	0.005 U	--	--	--	--	--
SH-S5A	SH-S5A @ 8	08/02/95	Confirmation	8 - 8	Present	--	--	68	200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S5	SH-S5 @ 5	07/29/95	Confirmation	5 - 5	Removed	ND	--	--	--	*0.005 U*	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	*0.005 U*	--	0.010 U	ND	0.005 U	--	--	--	--	--
SH-S6	SH-S6 @ 3	07/29/95	Confirmation	3 - 3	Present	ND	--	--	--	*0.005 U*	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	*0.005 U*	--	0.010 U	ND	0.005 U	--	--	--	--	--
SH-S7	SH-S7 @ 9.5	07/29/95	Confirmation	9.5 - 9.5	Present	--	5.8 U	12 U	47 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	9.3
SH-S9	SH-S9 @ 10	07/29/95	Confirmation	10 - 10	Present	--	5.5 U	11 U	44 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S8	SH-S8 @ 13	07/29/95	Confirmation	13 - 13	Treated	--	2,600	180	45 U	0.52	3.1	64	18	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S11	SH-S11 @ 5	07/29/95	Confirmation	5 - 5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S10	SH-S10 @ 14	07/29/95	Confirmation	14 - 14	Treated	--	7,200	800	150	8.5	17	28	35	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S12	SH-S12 @ 18	07/31/95	Confirmation	18 - 18	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S15	SH-S15 @ 20	08/04/95	Confirmation	20 - 20	Present	--	7.7	12 U	47 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S13	SH-S13 @ 16	08/04/95	Confirmation	16 - 16	Treated	--	6.4	12 U	47 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S13	SH-S14 @ 16	08/04/95	Confirmation	16 - 16	Treated	--	17	11 U	44 U	*0.028 U*	0.028	0.028 U	0.82	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S16	SH-S16 @ 22	08/04/95	Confirmation	22 - 22	Present	--	5.8 U	14	47 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S17	SH-S17 @ 16	08/04/95	Confirmation	16 - 16	Present	--	6.0 U	12 U	48 U	*0.030 U*	0.030 U	0.030 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S18	SH-S18 @ 21	08/04/95	Confirmation	21 - 21	Present	--	6.0 U	12 U	48 U	*0.030 U*	0.030 U	0.030 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	1.9 U	--
SH-S18	SH-S19 @ 21	08/04/95	Confirmation	21 - 21	Present	--	6.0 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	1.7 U	--
SH-S20	SH-S20 @ 26	08/04/95	Confirmation	26 - 26	Present	--	6.2 U	12 U	49 U	*0.031 U*	0.031 U	0.031 U	0.031 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S21	SH-S21 @ 17	08/07/95	Confirmation	17 - 17	Present	--	6.0 U	12 U	48 U	*0.030 U*	0.030 U	0.030 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S23	SH-S23 @ 17	08/07/95	Confirmation	17 - 17	Present	--	6.8 U	14 U	54 U	*0.034 U*	0.034 U	0.034 U	0.034 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S22	SH-S22 @ 14	08/07/95	Confirmation	14 - 14	Treated	--	34	9,800	11,000	*0.027 U*	0.24	0.11	0.28	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S24	SH-S24 @ 14	08/08/95	Confirmation	14 - 14	Present	--	6.0 U	12 U	48 U	*0.030 U*	0.030 U	0.030 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S25	SH-S25 @ 15	08/08/95	Confirmation	15 - 15	Present	--	5.6 U	11 U	44 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S26	SH-S26 @ 14	08/08/95	Confirmation	14 - 14	Present	--	5.5 U	11 U	44 U	*0.027 U*	0.027 U	0.027 U	0.027 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S26	SH-S27 @ 14	08/08/95	Confirmation	14 - 14	Present	--	5.5 U	11 U	44 U	*0.027 U*	0.027 U	0.027 U	0.027 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S28	SH-S28 @ 14	08/08/95	Confirmation	14 - 14	Present	--	5.6 U	11 U	45 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S29	SH-S29 @ 16	08/08/95	Confirmation	16 - 16	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S30	SH-S30 @ 18	08/08/95	Confirmation	18 - 18	Present	--	5 U	11 U	43 U	*0.027 U*	0.027 U	0.027 U	0.027 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S31	SH-S31 @ 18	08/09/95	Confirmation	18 - 18	Present	--	5.7 U	11 U	45 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S32	SH-S32 @ 21	08/09/95	Confirmation	21 - 21	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S33	SH-S33 @ 17	08/09/95	Confirmation	17 - 17	Treated	--	5,500	260	45 U	0.94	7.3	9.9	25	--	--	--	--	--	--	--	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																				
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
SH-S33	SH-S34 @ 17	08/09/95	Confirmation	17 - 17	Treated	--	4,500	250	45 U	0.59	6.1	15	25	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-SE-SS-2	SE-SS-2	04/07/94	Confirmation	5 - 5	Removed	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-SE-SS-3	SE-SS-3	04/07/94	Confirmation	6 - 6	Removed	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-SS1	SS1	05/25/93	Exploration	1 - 1	Removed	D,O	--	410	1,800	0.050 U	0.050 U	0.050 U	0.050 U	--	--	--	0.050 U	--	--	ND	--	--	7.6	1.3	200	--
SH-SS2	SS2	05/25/93	Exploration	1 - 1	Removed	D,O	--	350	1,600	0.050 U	0.050 U	0.050 U	0.050 U	--	--	--	0.050 U	--	--	ND	--	--	3.3	0.25 U	16	--
1997 Agreed Order Investigation																										
DMB-15	DMB-15-6	03/23/99	Exploration	6 - 6	Present	--	5.00 U	10.0 U	56.9	0.050 U	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.400 U	0.20 U	--	--	--	--
DMB-16	DMB-16-6	03/23/99	Exploration	6 - 6	Present	--	5.00 U	10.0 U	25.0 U	0.050 U	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.050 U	--	--	--	--
DMB-17	DMB-17-6	03/23/99	Exploration	6 - 6	Present	--	5.00 U	10.0 U	25.0 U	0.050 U	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.051 U	--	--	--	--
PS-MW8	PS-MW8-20_19981005	10/05/98	Exploration	20 - 20	Present	--	5.0 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW8	PS-MW8-22.5_19981005	10/05/98	Exploration	22.5 - 22.5	Present	--	5.0 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B1	SH-B1-12_19980826	08/26/98	Exploration	12 - 12	Present	--	5.0 U	10.0 U	48.6	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B1	SH-B1-14.5_19980826	08/26/98	Exploration	14.5 - 14.5	Treated	--	11,000	10.4	25.0 U	10.0 U	676	10.0 U	150 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B2	SH-B2-15.5_19980910	09/10/98	Exploration	15.5 - 15.5	Present	--	5.00 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B2	SH-B2-19_19980901	09/01/98	Exploration	19 - 19	Present	--	5.00 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B3	SH-B3-13_19980910	09/10/98	Exploration	13 - 13	Present	--	5.00 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B3	SH-B3-15.5_19980910	09/10/98	Exploration	15.5 - 15.5	Present	--	5.00 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B3	SH-B3-17.5_19980910	09/10/98	Exploration	17.5 - 17.5	Present	--	5.00 U	13	45.8	0.0500 U	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B3	SH-B3-20_19980910	09/10/98	Exploration	20 - 20	Treated	--	8,650	307	125 U	12.5 U	12.5 U	40.0 U	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-GW3	SH-GW3-20_19990920	09/20/99	Exploration	20 - 20	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW6	SHMW6-15_19980925	09/25/98	Exploration	15 - 15	Present	--	5.00 U	10.0 U	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.200 U	0.100 U	0.100 U	--	--	--	--	ND	--	--	--	--	--	--
SH-MW6	SHMW6-20_19980925	09/25/98	Exploration	20 - 20	Present	--	9.84	17.9	25.0 U	0.0500 U	0.0500 U	0.0500 U	0.200 U	0.100 U	0.100 U	--	--	--	--	ND	--	--	--	--	--	--
SH-MW7	SHMW7-15_19980915	09/15/98	Exploration	15 - 15	Present	--	5.00 U	10.9	25.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1997 Agreed Order Remedial Action - Shaub-Ellison																										
SH-R-1	R-1-20	08/29/06	Exploration	20 - 20	Present	--	6.43 U	10.7 U	26.8 U	0.0386 U	0.0643 U	0.0643 U	0.129 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2-25	08/24/06	Exploration	25 - 25	Treated	--	12.3	3,420	1,570	0.0322 U	0.0537 U	0.0537 U	0.107 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3-20.5	08/19/05	Exploration	20.5 - 20.5	Treated	--	6,570	58.3	25 U	9.68	8.56	11.3	20.5	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-4	R-4-15	08/25/06	Exploration	15 - 15	Present	--	5.03 U	11.6 U	29 U	0.0302 U	0.0503 U	0.0503 U	0.101 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5-20	08/26/06	Exploration	20 - 20	Treated	--	2,100	32.6	28.2 U	0.776	0.0469 U	0.0469 U	4.5	--	--	--	--	--	--	--	--	--	--	--	--	--
2016 Agreed Order Investigation																										
A11-MW23D	A11-MW23D-6-7	06/24/19	Exploration	6 - 7	Present	--	5.1 U	28 U	56 U	0.00081 U	0.0041 U	0.00081 U	0.0016 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	0.00081 U	ND	0.00081 U	0.0057 U	11 U	0.56 U	5.6 U	--
A11-MW23D	A11-MW23D-9-10	06/24/19	Exploration	9 - 10	Present	--	--	27 U	55 U	0.00094 U	0.0047 U	0.00094 U	0.0019 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	0.00094 U	ND	0.00094 U	--	--	--	--	--
A11-MW23D	A11-MW23D-14-15	06/24/19	Exploration	14 - 15	Present	--	--	27 U	55 U	0.00090 U	0.0045 U	0.00090 U	0.0018 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	ND	0.00090 U	--	--	--	--	--
A11-MW23D	A11-MW23D-19-20	06/24/19	Exploration	19 - 20	Present	--	--	27 U	53 U	0.0010 U	0.0052 U	0.0010 U	0.0021 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	ND	0.0010 U	--	--	--	--	--
A11-MW23D	A11-MW23D-24-25	06/24/19	Exploration	24 - 25	Present	--	--	29 U	58 U	0.00092 U	0.0046 U	0.00092 U	0.0018 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	ND	0.00092 U	--	--	--	--	--
A11-MW23D	A11-MW23D-29-30	06/24/19	Exploration	29 - 30	Present	--	--	27 U	54 U	0.0012 U	0.0062 U	0.0012 U	0.0025 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	ND	0.0012 U	--	--	--	--	--
A11-MW23D	A11-MW23D-35-36	06/24/19	Exploration	35 - 36	Present	--	--	26 U	53 U	0.0013 U	0.0063 U	0.0013 U	0.0025 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	ND	0.0013 U	--	--	--	--	--
A11-MW23D	A11-MW23D-39-40	06/24/19	Exploration	39 - 40	Present	--	--	--	--	0.0011 U	0.0054 U	0.0011 U	0.0022 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0014 U	ND	0.0011 U	--	--	--	--	--
A11-MW23D	A11-MW23D-44-45	06/24/19	Exploration	44 - 45	Present	--	--	--	--	0.00082 U	0.0041 U	0.00082 U	0.0016 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.0011 U	ND	0.00082 U	--	--	--	--	--
A11-MW23D	A11-MW23D-49-50	06/24/19	Exploration	49 - 50	Present	--	--	--	--	0.00095 U	0.0048 U	0.00095 U	0.0019 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.00095 U	0.0012 U	ND	0.00095 U	--	--	--	--	--
A11-MW23D	A11-MW23D-54-55	06/24/19	Exploration	54 - 55	Present	--	--	--	--	0.0010 U	0.0051 U	0.0010 U	0.0020 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0013 U	ND	0.0010 U	--	--	--	--	--
A11-MW23D	A11-MW23D-59-60	06/24/19	Exploration	59 - 60	Present	--	--	--	--	0.00088 U	0.0044 U	0.00088 U	0.0018 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.0011 U	ND	0.00088 U	--	--	--	--	--
A11-MW23D	A11-MW23D-64-65	06/24/19	Exploration	64 - 65	Present	--	--	--	--	0.0011 U	0.0053 U	0.0011 U	0.0021 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0014 U	ND	0.0011 U	--	--	--	--	--
A11-MW23D	A11-MW23D-69-70	06/24/19	Exploration	69 - 70	Present	--	--	--	--	0.0012 U	0.0058 U	0.0012 U	0.0023 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0015 U	ND	0.0012 U	--	--	--	--	--
A11-MW23S	A11-MW23S-6-7	06/25/19	Exploration	6 - 7	Present	--	4.9 U	27 U	160	0.00084 U	0.0042 U	0.00084 U	0.0017 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	ND	0.00084 U	0.012	11 U	0.54 U	5.4 U	--
A11-MW23S	A11-MW23S-9-10	06/25/19	Exploration	9 - 10	Present	--	4.9 U	27 U	55 U	0.00090 U	0.0045 U	0.00090 U	0.0018 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	0.00090 U	ND	0.00090 U	0.0055 U	11 U	0.55 U	5.5 U	--
A11-MW23S	A11-MW23S-12-13	06/25/19	Exploration	12 - 13	Present	--	5.0 U	26 U	52 U	0.0013 U	0.0064 U	0.0013 U	0.0026 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	ND	0.0013 U	0.0052 U	10 U	0.52 U	5.2 U	--

Notes:

[1] Sample locations are shown on Figures 11-4 and 11-5. Location identification nomenclature was added to select wells as necessary (for example SH- was added to SH-R-1).

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical results is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

[4] Benzene may have been analyzed as full volatile organic compound (VOC) method and/or BTEX only. The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[5] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[6] Naphthalene may have been analyzed as a VOC, polycyclic aromatic hydrocarbon (PAH), and/or semi-volatile organic compound (SVOC). The lowest PQL or the greatest detected concentration is shown.

[7] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[8] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[9] Soil PCUL is based on the lowest value for protection of direct contact and groundwater as drinking water within the saturated zone and adjusted for PQL and Natural Background (see Tables 3-1 and 3-2).

[10] Soil screening level based on Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-6).

-- = not tested

1,2,4-TMB = 1,2,4-trimethylbenzene

1,3,5-TMB = 1,3,5-trimethylbenzene

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

DET = detected

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons

J = estimated value by laboratory

mg/kg = milligram per kilogram

MTBE = methyl tert-butyl ether

ND = not DET

NE = not established

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

U = analyte was ND at or greater than the listed reporting limit

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

Italic font type indicates the non-detect result is greater than the PCUL.

Gray text indicates that soil represented by the sample has been removed and that the sample result no longer represents current conditions.

Shading indicates that the DET concentration is greater than the PCUL.

Shading indicates that the DET concentration is greater than the screening level for vapor intrusion and/or the PCUL.

Table 11-5

Summary of Groundwater Chemical Analytical Results - Shaub-Ellison

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																				
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals		
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
Pre-1997 Agreed Order Investigation and Remedial Action																											
SH-MW1	SH-MW1-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	**6,300**	*1,000 U*	--	1 U	1 U	**33**	**69**	--	--	--	1 U	--	--	ND	--	--	--	--	--	--	--
SH-MW2	SH-MW2-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	**26,000**	**7,100**	--	1 U	1 U	**15**	**31**	--	--	--	1 U	--	--	ND	--	--	--	--	--	--	--
SH-MW2	FC-MW1-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	**14,000**	**19,000**	--	1 U	1 U	**14**	**37**	--	--	--	1 U	--	--	ND	--	--	--	--	--	--	--
SH-MW3	SH-MW3-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	1 U	**1**	1 U	1 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
SH-MW4	SH-MW4-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	**4,000**	**38,000**	--	**1**	1 U	1 U	1 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
SH-MW5	SH-MW5-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	1 U	**1**	1 U	1 U	--	--	--	1 U	--	--	ND	--	--	--	--	--	--	--
1997 Agreed Order Investigation																											
BL-MW4	BL-MW4_19991025	10/25/99	Qvi/Qva	Permanent	14.80	33.00	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
BL-MW4	BL-MW4_20000403	04/03/00	Qvi/Qva	Permanent	13.08	34.72	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
BL-MW4	BL-MW4_20000906	09/06/00	Qvi/Qva	Permanent	14.93	32.87	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-GW3	PS-GW3-13_19980826	08/26/98	Qva	Temporary	n/a	n/a	--	**199**	**290**	500 U	**5.37**	**1.54**	**10.7**	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-GW5	PS-GW5-23_19990916	09/16/99	Qva	Temporary	n/a	n/a	--	--	--	--	**1.87**	**10.1**	**1.38**	**8.27**	**2.43**	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19981023	10/23/98	Qva	Permanent	20.73	44.11	--	**55.3**	**829**	**512**	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19990113	01/13/99	Qva	Permanent	18.12	46.72	--	50 U	**425**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19990420	04/20/99	Qva	Permanent	20.42	44.42	--	50 U	**303**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19990909	09/09/99	Qva	Permanent	22.43	42.41	--	50 U	**502**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _20000407	04/07/00	Qva	Permanent	19.39	45.45	--	50 U	**406**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _20000906	09/06/00	Qva	Permanent	21.95	42.89	--	50 U	**337**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW9	PS-MW9_19991102	11/02/99	Qva	Permanent	14.20	41.13	--	**151**	**350**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-MW9	PS-MW9_20000403	04/03/00	Qva	Permanent	12.62	42.71	--	**111**	**323**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	**1.86**	**1.18**	--	--	--	**1.31**	**DET**	1.00 U	--	--	--	--	--	--
PS-MW9	PS-MW9_20000906	09/06/00	Qva	Permanent	15.48	39.85	--	**98.3**	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
SH-B2	SH-B2_19980910	09/10/98	Qva	Temporary	n/a	n/a	--	**68.7**	**1,050**	500 U	0.500 U	0.500 U	0.500 U	**1.80**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-B3	SH-B3_19980910	09/10/98	Qva	Temporary	n/a	n/a	--	**28,800**	**71,900**	*10,500 U*	*32.0 U*	50.0 U	**530**	**1,560**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-GW1	SH-GW1_19980827	08/27/98	Qva	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-GW2	SH-GW2_19980827	08/27/98	Qva	Temporary	n/a	n/a	--	50 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-GW3	SH-GW3_19990920	09/20/99	Qva	Temporary	n/a	n/a	--	**1,010**	**394**	500 U	1.00 U	**3.00**	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-GW4	SH-GW4_19990920	09/20/99	Qva	Temporary	n/a	n/a	--	50 U	250 U	500 U	1.00 U	**8.33**	1.00 U	**3.62**	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-MW6	SHMW6-102698	10/26/98	Qva	Permanent	13.73	35.09	--	**73.7**	**315**	500 U	0.500 U	0.500 U	0.500 U	0.500 U	**1.27**	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-MW6	SHDUP1-11299	01/12/99	Qva	Permanent	n/a	n/a	--	0.500 U	250 U	500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-MW6	SHMW6-11299	01/12/99	Qva	Permanent	12.43	36.39	--	50.0 U	250 U	500 U	0.500 U	**1.14**	0.500 U	**2.89**	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-MW6	SHMW6-41999	04/19/99	Qva	Permanent	12.70	36.12	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
SH-MW6	SH-MW6_19990908	09/08/99	Qva	Permanent	14.05	34.77	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	--	--	--	--	--	--	--
SH-MW7	SHMW7-102698	10/26/98	Qva	Permanent	14.05	34.36	--	3,040	**1,550**	500 U	**20.6**	10.0 U	5.00 U	25.0 U	**19.8**	10.0 U	*10.0 U*	*10.0 U*	--	**19.3**	**DET**	10.0 U	--	--	--	--	--	--
SH-MW7	SHMW7-11299	01/12/99	Qva	Permanent	12.72	35.69	--	**2,750**	**1,620**	500 U	**18.0**	1.00 U	**3.09**	**6.53**	**9.82**	**1.44**	*1.00 U*	1.00 U	--	**25.7**	DET	1.00 U	--	--	--	--	--	--
SH-MW7	SHMW7-41999	04/19/99	Qva	Permanent	12.27	36.14	--	**2,200**	**895**	500 U	1.00 U	1.00 U	**3.02**	**4.78**	**1.62**	1.00 U	*1.00 U*	1.00 U	--	**19.5**	**DET**	1.00 U	--	--	--	--	--	--
SH-MW7	SH-MW7_19990908	09/08/99	Qva	Permanent	14.89	33.52	--	**2,190**	**782**	500 U	1.00 U	1.00 U	**2.96**	**6.69**	**8.62**	**1.1**	--	--	--	**20.2**	**DET**	--	--	--	--	--	--	--
SH-MW7	SH-MW7_20000403	04/03/00	Qva	Permanent	12.70	35.71	--	**1,950**	**1,180**	500 U	1.00 U	1.00 U	**3.29**	**6.4**	**2.71**	**6.88**	--	--	--	**23.9**	**DET**	--	--	--	--	--	--	--
SH-MW7	SH-MW7_20000906	09/06/00	Qva	Permanent	15.00	33.41	--	**2,380 J**	**393**	500 U	1.00 U	1.00 U	**1.76**	**5.29**	**6.94**	**1.18**	--	--	--	**18.4**	**DET**	--	--	--	--	--	--	--
SH-MW8	SH-MW8_19991026	10/26/99	Qvi/Qva	Permanent	n/a	n/a	--	**858**	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	--	--	--	--	--	--	--
SH-MW8	SH-MW8_20000404	04/04/00	Qvi/Qva	Permanent	n/a	n/a	--	**334**	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	--	--	--	--	--	--	--
SH-MW8	SH-MW8_20000907	09/07/00	Qvi/Qva	Permanent	n/a	n/a	--	**284**	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	--	--	--	--	--	--	--
Supplemental Investigations Under the 1997 Agreed Order																											
BL-MW4	BL-MW4-130708	07/08/13	Qvi/Qva	Permanent	13.32	34.48	--	100 U	280 U	460 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.3 U	--	--	--	--	--	--
PS-MW8	PS-MW8-130711	07/11/13	Qva	Permanent	19.70	45.14	--	100 U	270 U	430 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.28 U	0.28 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW9	PS-MW9-130711	07/11/13	Qva	Permanent	12.25	43.08	--	100 U	280 U	450 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.28 U	0.28 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
SH-MW6	SH-MW6-130708	07/08/13	Qva	Permanent	12.15	36.67	--	100 U	270 U	430 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.3 U	--	--	--	--	--	--
SH-MW7	SH-MW7-130708	07/08/13	Qva	Permanent	12.41	36.00	--	**1,100**	*520 U*	420 U	0.40 U	2.0 U	0.40 U	**1.3**	**2.2**	0.40 U	*0.40 U*	0.40 U	0.40 U	**7.5**	**DET**	2.6 U	--	--	--	--	--	--
1997 Agreed Order Remedial Action - Shaub-Ellison																											
PS-MW9	PS-MW9_050831	08/31/05	Qva	Permanent	15.47	39.86	--	50 U	250 U	500 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW9	PS-MW9_101117	11/17/10	Qva	Permanent	11.47	43.86	--	**530**	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	**2.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW9	PS-MW9_110510	05/10/11	Qva	Permanent	11.96	43.37	--	**78**	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW6	SH-MW6_050831	08/31/05	Qva	Permanent	13.85	34.97	--	50 U	250 U	500 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW6	SH-MW6_110510	05/10/11	Qva	Permanent	11.44	37.38	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_050831	08/31/05	Qva	Permanent	15.05	33.36	--	**2,590**	250 U	500 U	0.5 U	**0.704**	**1.16**	**7.35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_070124	01/24/07	Qva	Permanent	11.78	36.63	--	**312**	236 U	472 U	**1.15**	0.5 U	0.5 U	**1.14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_070425	04/25/07	Qva	Permanent	12.89	35.52	--	**2,140**	245 U	490 U	**2.13**	**1.39**	**1.73**	**3.77**	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																					
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	cVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
SH-MW7	SH-MW7_070730	07/30/07	Qva	Permanent	14.73	33.68	--	**1,590**	236 U	472 U	**1.96**	**1.37**	**3.04**	**3.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_071025	10/25/07	Qva	Permanent	13.32	35.09	--	**1,710**	238 U	476 U	**2.42**	**0.954**	**1.92**	**2.59**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_080130	01/30/08	Qva	Permanent	12.76	35.65	--	**906**	245 U	490 U	**1.62**	**0.904**	**0.903**	**1.89**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_080428	04/28/08	Qva	Permanent	13.22	35.19	--	**387**	248 U	495 U	0.5 U	0.5 U	**1.98**	**1.82**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_080730	07/30/08	Qva	Permanent	14.31	34.10	--	**727**	236 U	472 U	**1.4**	**0.999**	**1.22**	**2.98**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_081103	11/03/08	Qva	Permanent	14.29	34.12	--	**1,380**	236 U	472 U	**2.05**	**12**	**2.51**	**10.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_090505	05/05/09	Qva	Permanent	12.91	35.50	--	**1,170**	245 U	490 U	**1.31**	**1.17**	**1.6**	**8.13**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_091103	11/03/09	Qva	Permanent	13.13	35.28	--	**940**	**220**	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_100503	05/03/10	Qva	Permanent	12.45	35.96	--	**530**	**150**	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_101117	11/17/10	Qva	Permanent	11.72	36.69	--	**610**	**160**	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW7	SH-MW7_110510	05/10/11	Qva	Permanent	12.17	36.24	--	**460**	**140**	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_050831	08/31/05	Qvi/Qva	Permanent	22.13	25.72	--	**115**	250 U	500 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_070124	01/24/07	Qvi/Qva	Permanent	20.72	27.13	--	**468**	236 U	472 U	**0.752**	**1.15**	**1.02**	**4.14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_070425	04/25/07	Qvi/Qva	Permanent	21.21	26.64	--	**268**	245 U	490 U	0.5 U	0.5 U	0.5 U	**1.73**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_070730	07/30/07	Qvi/Qva	Permanent	21.64	26.21	--	**332**	238 U	476 U	0.5 U	**0.627**	**1.49**	**1.03**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_071025	10/25/07	Qvi/Qva	Permanent	21.38	26.47	--	**415**	238 U	476 U	**0.76**	0.5 U	**2.03**	**2.45**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_080130	01/30/08	Qvi/Qva	Permanent	21.09	26.76	--	**524**	245 U	490 U	**0.931**	**1.01**	**0.945**	**3.11**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_080428	04/28/08	Qvi/Qva	Permanent	21.40	26.45	--	**436**	248 U	495 U	**0.811**	**0.86**	**3.66**	**3.05**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_080730	07/30/08	Qvi/Qva	Permanent	21.81	26.04	--	**278**	245 U	490 U	0.5 U	**0.625**	**2.37**	**2.93**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_081103	11/03/08	Qvi/Qva	Permanent	21.72	26.13	--	**345**	236 U	472 U	0.5 U	**0.754**	**1.55**	**3.69**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_090505	05/05/09	Qvi/Qva	Permanent	20.91	26.94	--	**571**	243 U	485 U	**0.962**	**1.33**	**4.39**	**6.08**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_091103	11/03/09	Qvi/Qva	Permanent	21.21	26.64	--	**440**	**130**	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_100503	05/03/10	Qvi/Qva	Permanent	20.87	26.98	--	**470**	**130**	240 U	1 U	1 U	1 U	**2.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_101117	11/17/10	Qvi/Qva	Permanent	21.64	26.21	--	**490**	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW8	SH-MW8_110510	05/10/11	Qvi/Qva	Permanent	20.83	27.02	--	**410**	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-1	R-1_060905	09/05/06	Qva	Permanent	21.18	40.60	--	50 U	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-1	R-1_101116	11/16/10	Qva	Permanent	17.28	44.50	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-1	R-1_110510	05/10/11	Qva	Permanent	17.92	43.86	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_060905	09/05/06	Qva	Permanent	20.71	40.51	--	50 U	**2.62**	**1,180**	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_070124	01/24/07	Qva	Permanent	16.27	44.95	--	50 U	**647**	**479**	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_070425	04/25/07	Qva	Permanent	19.34	41.88	--	50 U	243 U	485 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_070730	07/30/07	Qva	Permanent	19.23	41.99	--	50 U	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_071026	10/26/07	Qva	Permanent	18.34	42.88	--	**54.2**	238 U	476 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_080130	01/30/08	Qva	Permanent	17.57	43.65	--	50 U	243 U	485 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_080428	04/28/08	Qva	Permanent	18.83	42.39	--	**62.3**	248 U	495 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_080730	07/30/08	Qva	Permanent	20.27	40.95	--	50 U	245 U	490 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_081103	11/03/08	Qva	Permanent	19.90	41.32	--	50 U	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_090505	05/05/09	Qva	Permanent	17.29	43.93	--	50 U	240 U	481 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_091103	11/03/09	Qva	Permanent	18.43	42.79	--	50 U	*120,000 U*	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_100503	05/03/10	Qva	Permanent	17.28	43.94	--	50 U	*120,000 U*	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_101116	11/16/10	Qva	Permanent	16.34	44.88	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-2	R-2_110510	05/10/11	Qva	Permanent	16.97	44.25	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_060905	08/31/05	Qva	Permanent	15.86	38.98	--	**5,700**	250 U	500 U	2.5 U	2.5 U	**5.6**	**36.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_070124	01/24/07	Qva	Permanent	12.42	42.71	--	50 U	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_070425	04/25/07	Qva	Permanent	14.25	40.88	--	50 U	243 U	485 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_070730	07/30/07	Qva	Permanent	15.02	40.11	--	**263**	238 U	476 U	0.5 U	0.5 U	**0.73**	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_071025	10/25/07	Qva	Permanent	14.19	40.94	--	**227**	238 U	476 U	**0.743**	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_080130	01/30/08	Qva	Permanent	13.62	41.51	--	50 U	245 U	490 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_080428	04/28/08	Qva	Permanent	14.64	40.49	--	50 U	240 U	481 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_080730	07/30/08	Qva	Permanent	15.81	39.32	--	**434**	245 U	490 U	**3.35**	0.5 U	**1.33**	**1.77**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_081103	11/03/08	Qva	Permanent	15.66	39.47	--	**722**	236 U	472 U	0.5 U	**0.518**	**1.02**	**1.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_090505	05/05/09	Qva	Permanent	13.31	41.82	--	50 U	238 U	476 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_091103	11/03/09	Qva	Permanent	14.27	40.86	--	50 U	*120,000 U*	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_100503	05/03/10	Qva	Permanent	13.27	41.86	--	**560**	**170**	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_101116	11/16/10	Qva	Permanent	12.49	42.64	--	**390**	**140**	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-3	R-3_110510	05/10/11	Qva	Permanent	13.03	42.10	--	**430**	**130**	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-4	R-4_060905	09/05/06	Qva	Permanent	18.04	36.95	--	**416**	236 U	472 U	**3.21**	**0.80**	**1.42**	**3.26**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-4	R-4_101116	11/16/10	Qva	Permanent	15.13	39.86	--	**330**	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-4	R-4_110510	05/10/11	Qva	Permanent	15.50	39.49	--	**410**	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_060905	09/05/06	Qva	Permanent	16.31	34.26	--	**154**	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_070124	01/24/07	Qva	Permanent	11.96	38.61	--	50 U	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_070425	04/25/07	Qva	Permanent	13.02	37.55	--	50 U	245 U	490 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																				
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	cVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal - Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE	NE
SH-R-5	R-5_070730	07/30/07	Qva	Permanent	14.13	36.44	--	50 U	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_071026	10/26/07	Qva	Permanent	13.25	37.32	--	50 U	238 U	476 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_080130	01/30/08	Qva	Permanent	12.28	38.29	--	50 U	240 U	481 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_080428	04/28/08	Qva	Permanent	13.68	36.89	--	**74.8**	250 U	500 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_080730	07/30/08	Qva	Permanent	14.82	35.75	--	**81.2**	243 U	485 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_081103	11/03/08	Qva	Permanent	14.99	35.58	--	**94.5**	236 U	472 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_090505	05/05/09	Qva	Permanent	12.17	38.40	--	50 U	245 U	490 U	0.5 U	0.5 U	0.5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_091103	11/03/09	Qva	Permanent	13.03	37.54	--	**160**	**140**	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_100503	05/03/10	Qva	Permanent	12.05	38.52	--	50 U	*120,000 U*	240 U	1 U	1 U	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_101117	11/17/10	Qva	Permanent	11.19	39.38	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-R-5	R-5_110510	05/10/11	Qva	Permanent	11.59	38.98	--	50 U	*120,000 U*	240 U	1.0 U	1.0 U	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2016 Agreed Order Investigation																												
A11-MW23D	A11-MW23D-190912	09/12/19	Qva	Permanent	16.91	46.25	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW23D	A11-MW23D-200318	03/18/20	Qva	Permanent	15.42	47.74	--	--	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW23D	A11-MW23D-200902	09/02/20	Qva	Permanent	16.86	46.30	--	--	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
A11-MW23S	A11-MW23S-190912	09/12/19	Qvi/Qva	Permanent	21.35	41.93	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
A11-MW23S	A11-MW23S-200318	03/18/20	Qvi/Qva	Permanent	18.64	44.64	--	--	200 U	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
A11-MW23S	A11-MW23S-200902	09/02/20	Qvi/Qva	Permanent	21.07	42.21	--	--	220 U	220 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
BL-MW4	BL-MW4-161215	12/15/16	Qvi/Qva	Permanent	10.36	37.44	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
BL-MW4	BL-MW4-20190312	03/12/19	Qvi/Qva	Permanent	11.89	35.91	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
BL-MW4	BL-MW4-190906	09/06/19	Qvi/Qva	Permanent	13.31	34.49	--	100 U	270 U	440 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
BL-MW4	BL-MW4-200323	03/23/20	Qvi/Qva	Permanent	11.79	36.01	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	0.048 U
BL-MW4	BL-MW4-200901	09/01/20	Qvi/Qva	Permanent	13.20	34.60	--	100 U	220 U	220 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW8	PS-MW8-161221	12/21/16	Qva	Permanent	16.95	47.89	--	--	260 U	**450**	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW8	PS-MW8-20190313	03/13/19	Qva	Permanent	19.37	45.47	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW8	PS-MW8-190912	09/12/19	Qva	Permanent	22.08	42.76	--	100 U	280 U	450 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW8	PS-MW8-200320	03/20/20	Qva	Permanent	18.76	46.08	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW8	PS-MW8-200902	09/02/20	Qva	Permanent	21.85	42.99	--	100 U	200 U	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW9	PS-MW9-161221	12/21/16	Qva	Permanent	10.33	45.00	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW9	PS-MW9-20190314	03/14/19	Qva	Permanent	11.91	43.42	--	--	250 U	400 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW9	PS-MW9-190912	09/12/19	Qva	Permanent	11.26	44.07	--	100 U	280 U	460 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW9	PS-MW9-200326	03/26/20	Qva	Permanent	11.12	44.21	--	100 U	200 U	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
PS-MW9	PS-MW9-200903	09/03/20	Qva	Permanent	13.98	41.35	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	**DET**	1.0 U	--	--	--	--	--	--
SH-MW6	SH-MW6-161221	12/21/16	Qva	Permanent	10.79	38.03	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
SH-MW6	SH-MW6-20190314	03/14/19	Qva	Permanent	11.27	37.55	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
SH-MW6	SH-MW6-190912	09/12/19	Qva	Permanent	12.26	36.56	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
SH-MW6	SH-MW6-200320	03/20/20	Qva	Permanent	11.38	37.44	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
SH-MW6	SH-MW6-200903	09/03/20	Qva	Permanent	12.63	36.19	--	100 U	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
SH-MW7	SH-MW7-161228	12/28/16	Qva	Permanent	10.88	37.53	--	**340**	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
SH-MW7	SH-MW7-20190314	03/14/19	Qva	Permanent	11.67	36.74	--	**940**	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	**DET**	--	--	--	--	--	--	--
SH-MW7	SH-MW7-190909	09/09/19	Qva	Permanent	13.37	35.04	--	**960**	--	--	0.20 U	1.0 U	**0.39**	**2.1**	**0.40**	**0.29**	*0.20 U*	0.20 U	0.20 U	**9.5**	**DET**	1.0 U	--	--	--	--	--	--
SH-MW7	SH-MW7-200320	03/20/20	Qva	Permanent	11.50	36.91	--	**1,400**	--	--	0.20 U	1.0 U	**0.32**	**1.5**	**0.26**	**0.23**	*0.20 U*	0.20 U	0.20 U	**7.6**	**DET**	1.0 U	--	--	--	--	--	--
SH-MW7	SH-MW7-200903	09/03/20	Qva	Permanent	13.09	35.32	--	**910**	--	--	0.20 U	1.0 U	**0.43**	**2.1**	**0.31**	**0.27**	*0.20 U*	0.20 U	0.20 U	**8.7**	**DET**	1.0 U	--	--	--	--	--	--
SH-MW8	SH-MW8-161220	12/20/16	Qvi/Qva	Permanent	20.38	27.47	--	**130**	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
SH-MW8	SH-MW8-20190312	03/12/19	Qvi/Qva	Permanent	20.66	27.19	--	**260**	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	ND	--	--	--	--	--	--	--
SH-MW8	SH-MW8-190916	09/16/19	Qvi/Qva	Permanent	21.51	26.34	--	**240**	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
SH-MW8	SH-MW8-200323	03/23/20	Qvi/Qva	Permanent	20.61	27.24	--	**230**	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--
SH-MW8	SH-MW8-200917	09/17/20	Qvi/Qva	Permanent	21.40	26.45	--	**150**	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	ND	1.0 U	--	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 11-4 and 11-5. Location identification nomenclature was added to select wells as necessary (for example SH- was added to SH-R-1).

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical result list is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 1,000 µg/L.

[4] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[5] Naphthalene may have been analyzed as a volatile organic compound (VOC), polycyclic aromatic hydrocarbon (PAH), and/or semi-volatile organic compound (SVOC). The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[6] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient concentration (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[7] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[8] Groundwater PCUL is based on the lowest value for protection of groundwater as drinking water, adjusted for PQL (see Table 3-3).

[9] Groundwater screening level referenced from Ecology's CLARC (Cleanup Levels and Risk Calculation) Table (Excel) dated January 2023 and Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-5 and 3-6).

-- = not tested
µg/L = microgram per liter
1,2,4-TMB = 1,2,4-trimethylbenzene
1,3,5-TMB = 1,3,5-trimethylbenzene
BTEX = benzene, toluene, ethylbenzene and xylenes
CVOCs = chlorinated volatile organic compounds
DET = detected
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons
J = estimated value by laboratory
MTBE = methyl tert-butyl ether
n/a = not available
Qva = Vashon advance outwash
Qvi = Vashon ice-contact deposits
TOC = top of casing
TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil
TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification
U = analyte was ND at or greater than the listed reporting limit.
Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.
Italic font type indicates the non-detect result is greater than the PCUL.
Shading indicates that the detected concentration is greater than the PCUL.
Shading indicates that the detected concentration is greater than the screening level for vapor intrusion and/or the PCUL.

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI.aprx\018310913_F11-01_Shaub_Ellison_Overview Date Exported: 05/25/23 by glohrmeyer

Commerce Street

Parcel:
2019040032

Parcel:
2019040010

Parcel:
2018040090

GWP

Garrettson
Woodruff &
Pratt (GWP)

South 19th Street

Shaub-Ellison

Walsh
Gardner
(WG)

William
W. Philip
Hall (WPH)

Pacific Ave

Parcel:
0320043152

Washington State
History Museum

Parcel:
0320043150

Overview Map

Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Shaub-Ellison Site - Area of Soil and/or Groundwater with One or More Contaminants of Concern Exceeding the Proposed Cleanup Level (PCUL)
- Other Identified Property-Specific Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint

W S N E

25 0 25

Feet

Overview
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-1

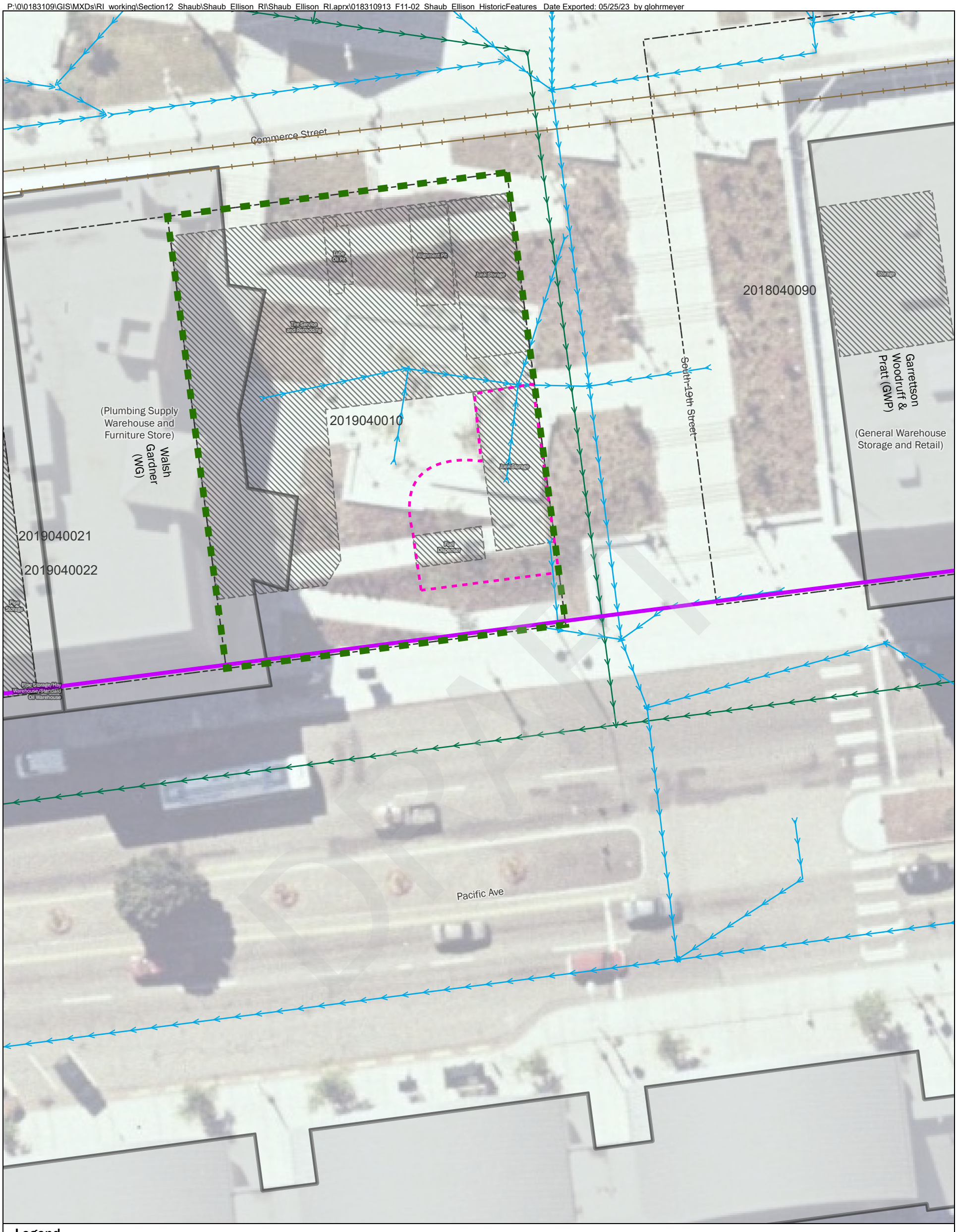
Notes:

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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI.aprx\018310913_F11-02_Shaub_Ellison_HistoricFeatures Date Exported: 05/25/23 by glohrmeyer



Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Parcel Boundary and Number (Historic)
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- UST Area
- Existing Building Footprint (with Former Operations)
- Historic Building Footprint/Feature
- Former Historic Rail Line
- Existing Historic Rail Line

W N E S

25 0 25

Feet

Notes:

UST = underground storage tank

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.

Data Source: Aerial Imagery provided by Tacoma, 1998

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

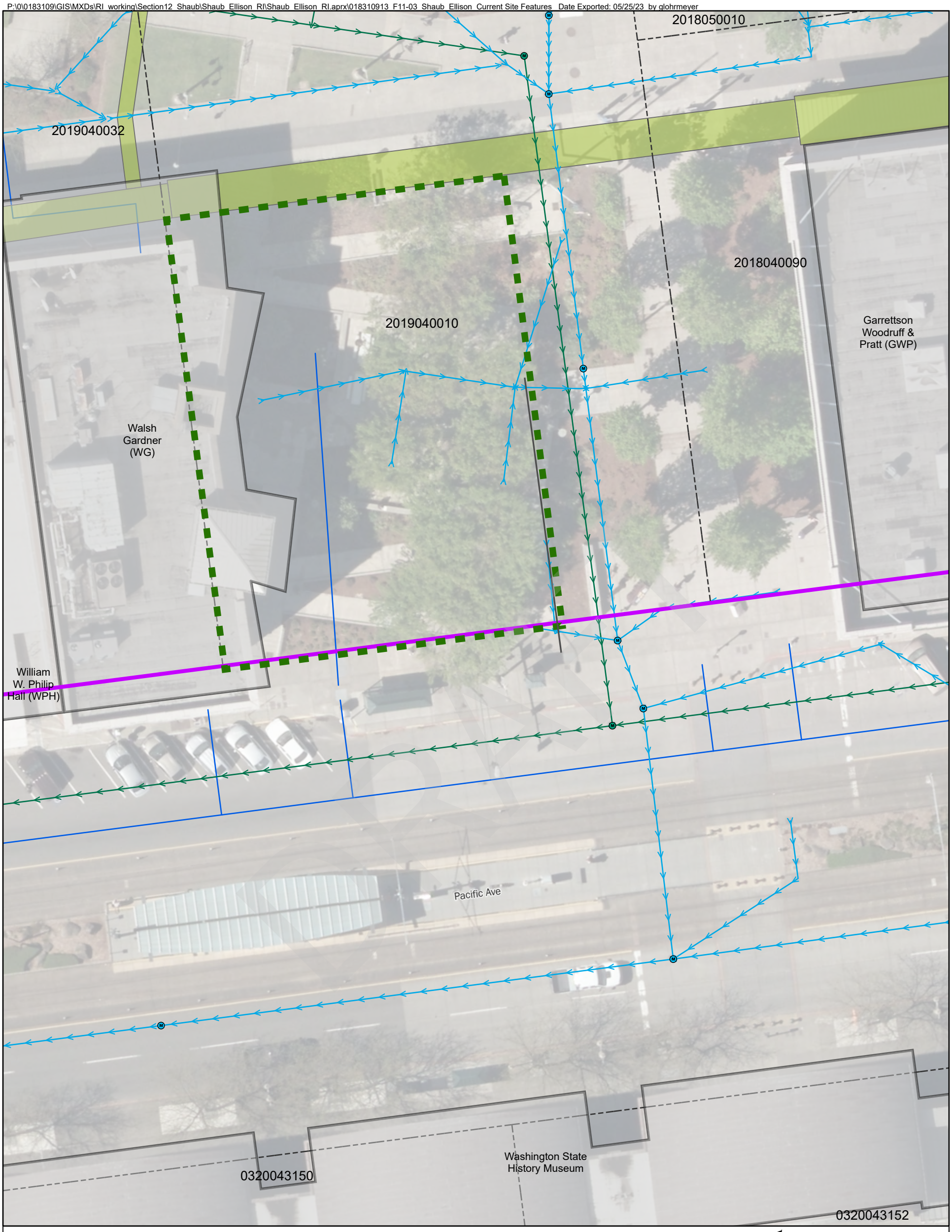
Historic Features and Land Use
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-2

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI.aprx\018310913_F11-03_Shaub_Ellison_Current Site Features Date Exported: 05/25/23 by glohrmeyer



Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint
- Utilidor Footprint
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility

W S E N

25 0 25

Feet

Current Features and Utility Infrastructure
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-3

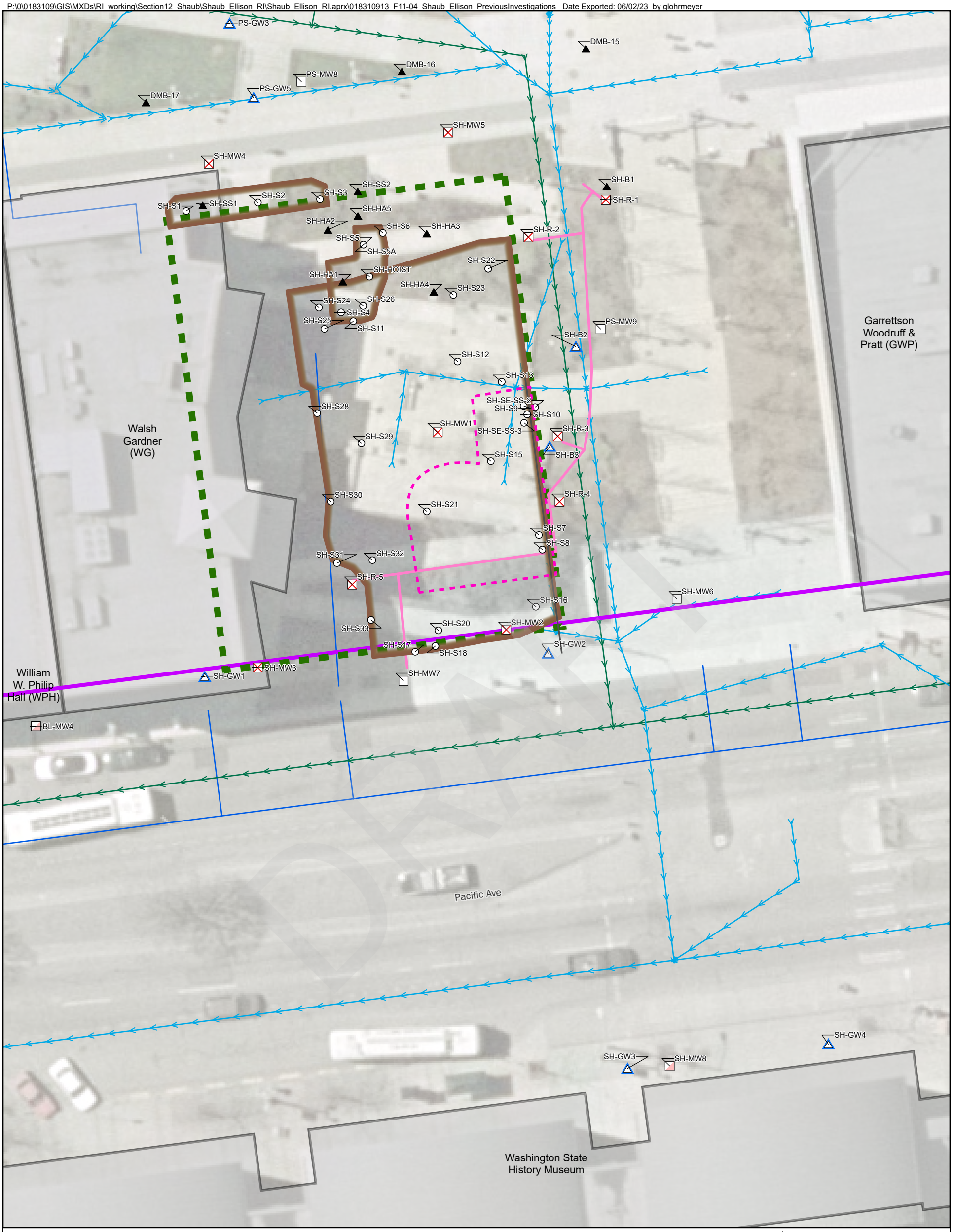
Notes:

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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI.aprx\018310913_F11-04_Shaub_Ellison_PreviousInvestigations Date Exported: 06/02/23 by glohrmeyer



Legend

- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Boring
- Boring with Grab Groundwater Sample in Qva Aquifer
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Bioventing and ISOC In-Situ Remediation System Piping
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Existing Building Footprint
- UST Area

W N S E

25 0 25

Feet

Notes:

UST = underground storage tank

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.

Data Source: Aerial Imagery provided by Tacoma, 2002

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

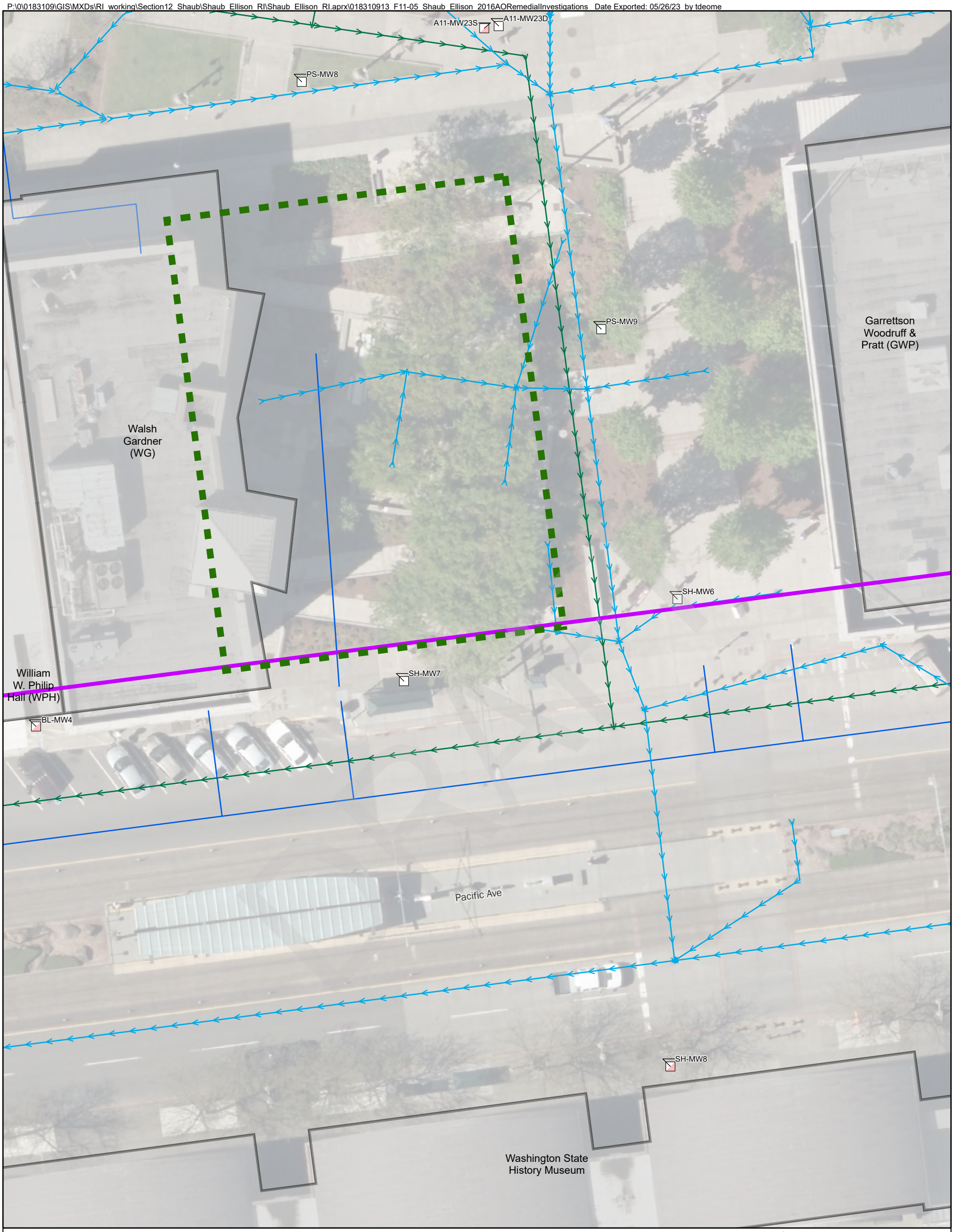
Previous Investigations and Remedial Actions
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-4

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI.aprx\018310913_F11-05_Shaub_Ellison_2016AORemedialInvestigations Date Exported: 05/26/23 by tdeome



Legend

- Qva Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Existing Building Footprint

W E S N

25 0 25

Feet

2016 Agreed Order Remedial Investigation Locations
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-5

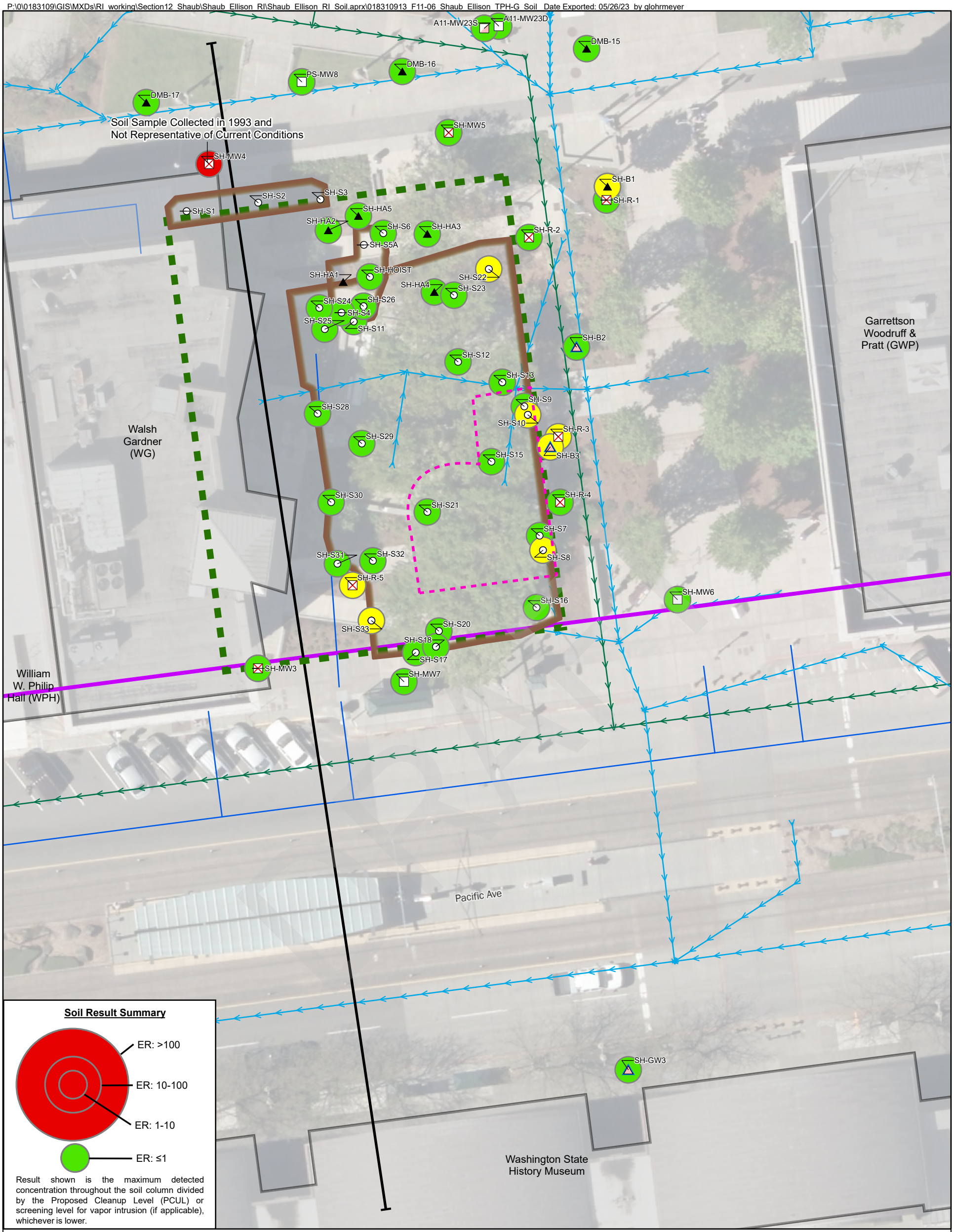
Notes:

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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_Soil.aprx\018310913_F11-06_Shaub_Ellison_TPH-G_Soil Date Exported: 05/26/23 by glohrmeyer



Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Previous Soil PCUL Exceedance Adressed through In-Situ Treatment - Groundwater Results Confirm Successful Treatment of Soil Contamination.
- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- UST Area
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

W N S E

25 0 25

Feet

Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage area
Basis for Screening = 30 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-G in Soil
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-6

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_Soil.aprx\018310913_F11-07_Shaub_Ellison_TPH-D_Soil Date Exported: 05/26/23 by glohrmeyer

PS-GW3
A11-MW23S
A11-MW23D
DMB-15
DMB-16
PS-MW8
DMB-17
PS-GW5
SH-MW5
SH-MW4
SH-B1
SH-R-1
SH-S2
SH-S3
SH-S1
SH-HA5
SH-HA2
SH-S6
SH-HA3
SH-R-2
SH-S5
SH-HOIST
SH-HA1
SH-S22
SH-HA4
SH-S23
SH-S24
SH-S26
SH-S4
SH-S25
SH-S11
SH-B2
SH-S12
SH-S13
SH-S9
SH-SE-SS-2
SH-S10
SH-S28
SH-SE-SS-3
SH-R-3
SH-S29
SH-B3
SH-S15
SH-R-4
SH-S30
SH-S21
SH-S7
SH-S8
SH-S31
SH-S32
SH-R-5
SH-MW6
SH-S16
SH-S33
SH-S20
SH-S18
SH-S17
SH-GW2
SH-MW3
SH-GW1
SH-MW7
SH-GW4
SH-GW3

Walsh Gardner (WG)

Garrettson Woodruff & Pratt (GWP)

William W. Philip Hall (WPH)

Pacific Ave

Washington State History Museum

Soil Result Summary

ER: >100
ER: 10-100
ER: 1-10
ER: ≤1

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Previous Soil PCUL Exceedance Adressed through In-Situ Treatment - Groundwater Results Confirm Successful Treatment of Soil Contamination.
- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring with Grab Groundwater Sample in Qva Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- UST Area
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

W
S
N
E

25 0 25
Feet

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage area
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-D in Soil
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-7

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_Soil.aprx\018310913_F11-08_Shaub_Ellison_TPH-O Soil Date Exported: 05/26/23 by glohrmeyer

Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Previous Soil PCUL Exceedance Adressed through In-Situ Treatment - Groundwater Results Confirm Successful Treatment of Soil Contamination.
- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- UST Area
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

25 0 25

Feet

Notes:

TPH-O = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
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.

Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

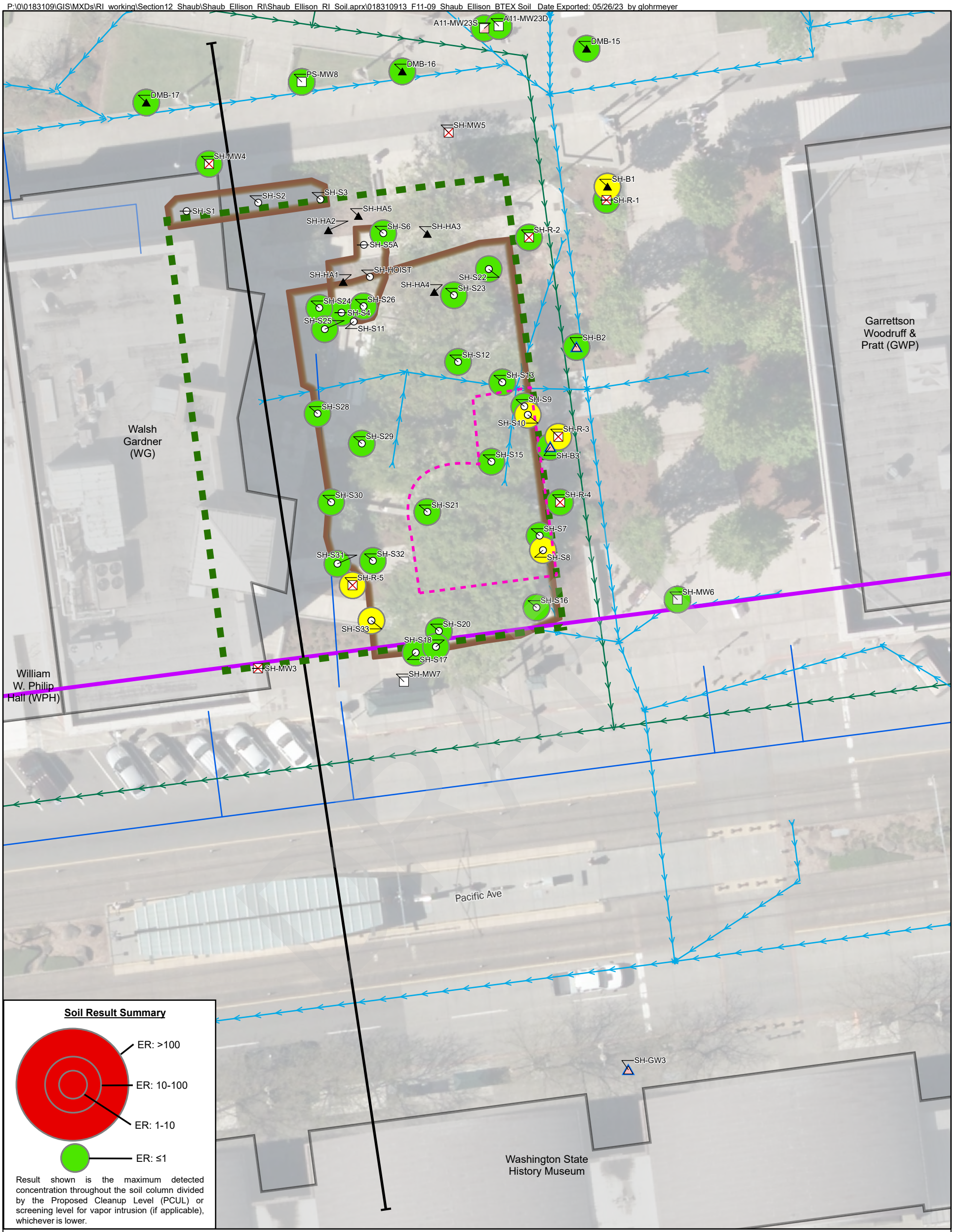
Summary of TPH-O in Soil
Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-8

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_Soil.aprx\018310913_F11-09_Shaub_Ellison_BTEX Soil Date Exported: 05/26/23 by glohrmeyer



Soil Result Summary

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Previous Soil PCUL Exceedance Adressed through In-Situ Treatment - Groundwater Results Confirm Successful Treatment of Soil Contamination.
- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Confirmation Sample
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- UST Area
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

25 0 25

Feet

Notes:

BTEX= Benzene, Ethylbenzene, Toluene and Total Xylenes, ER = Exceedance Ratio, UST = underground storage area
Basis for Screening = Benzene (0.0017 mg/kg, Toluene (0.34 mg/kg),), Ethylbenzene (0.27 mg/kg), Total Xylenes (0.83 mg/kg)
milligram per kilogram (mg/kg) – See Section Tables
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.
Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of BTEX in Soil Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-9

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_GW.aprx\018310913_F11-10_Shaub_Ellison_TPH-G_GW Date Exported: 05/26/23 by tdeome

A11-MW23S
A11-MW23D
AS
PS-MW8
PS-MW9
Garrettson Woodruff & Pratt (GWP)
Walsh Gardner (WG)
SH-MW6
William W. Philip Hall (WPH)
SH-MW7
BL-MW4
Pacific Ave
SH-MW8
Washington State History Museum
AS'

Groundwater Result Summary

ER: >100
ER: 10-100
ER: 1-10
ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Qva Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- UST Area
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

W E S N

25 0 25

Feet

Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 800 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-G in the Qvi/Qva Aquifer Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

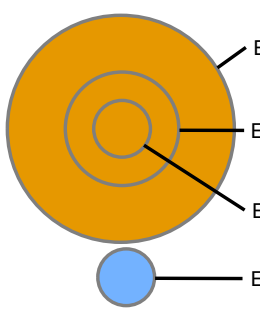
GeoEngineers

Figure 11-10

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_GW.aprx\018310913_F11-11_Shaub_Ellison_TPH-D_GW Date Exported: 05/26/23 by tdeome

A11-MW23S
A11-MW23D
AS
PS-MW8
PS-MW9
Garrettson Woodruff & Pratt (GWP)
Walsh Gardner (WG)
SH-MW6
William W. Philip Hall (WPH)
SH-MW7
BL-MW4
Pacific Ave
SH-MW8
Washington State History Museum
AS'

Groundwater Result Summary



Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Qva Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- UST Area
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

W N S E

25 0 25

Feet

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ration, UST = underground storage tank
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-D in the Qvi/Qva Aquifer Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-11

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_GW.aprx\018310913_F11-12_Shaub_Ellison_TPH-O GW Date Exported: 05/26/23 by tdeome

A11-MW23S
A11-MW23D
AS
PS-MW8
GWP-FOOT DRAIN
PS-MW9
Garrettson Woodruff & Pratt (GWP)
Walsh Gardner (WG)
SH-MW6
William W. Philip Hall (WPH)
SH-MW7
BL-MW4
Pacific Ave
SH-MW8
Washington State History Museum
AS'

Groundwater Result Summary

ER: >100
ER: 10-100
ER: 1-10
ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Qva Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- UST Area
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

W
S
N
E

25 0 25
Feet

Notes:

TPH-O = Oil-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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.

Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

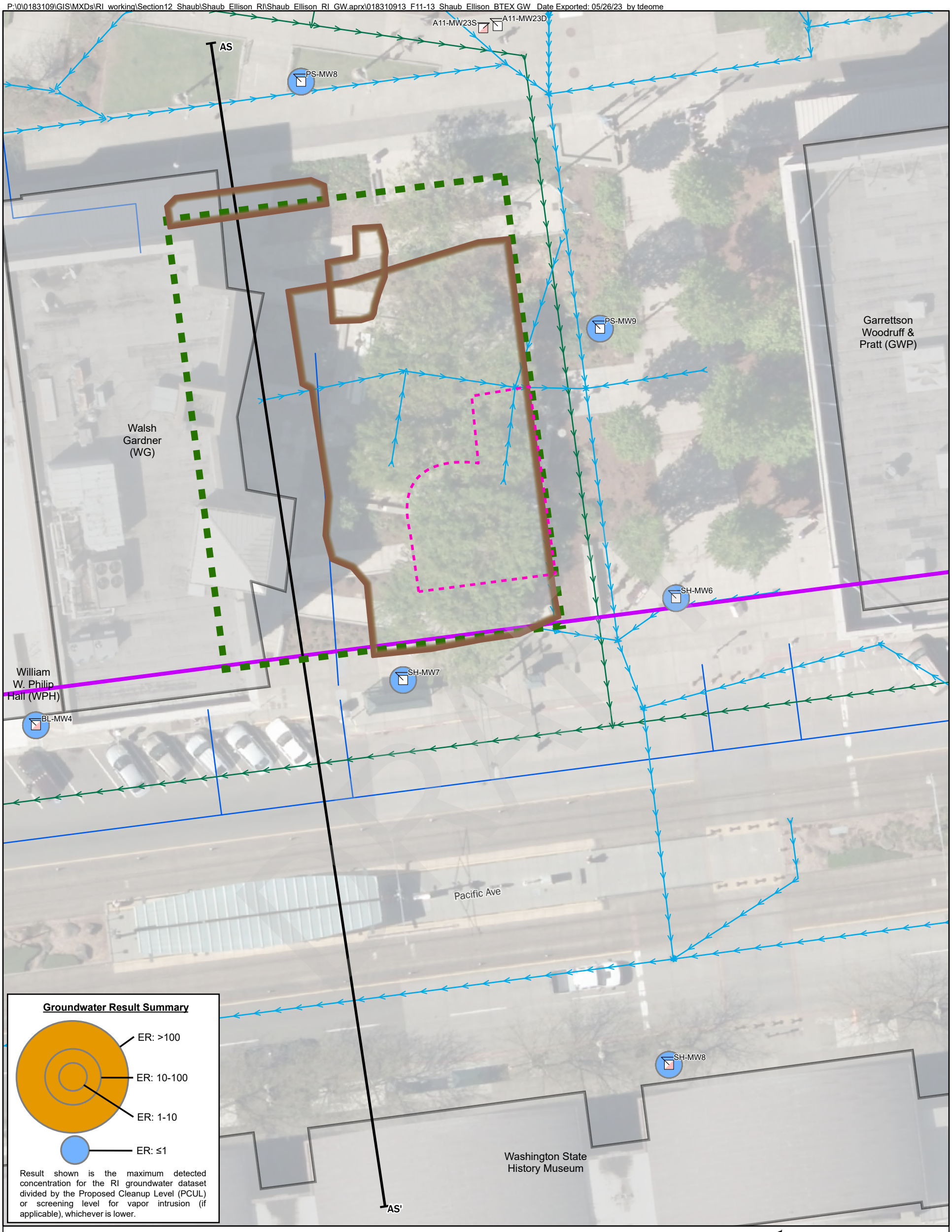
Summary of TPH-O in the Qvi/Qva Aquifer Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-12

P:\0\0183109\GIS\MXDs\RI_working\Section12_Shaub\Shaub_Ellison_RI\Shaub_Ellison_RI_GW.aprx\018310913_F11-13_Shaub_Ellison_BTEX GW Date Exported: 05/26/23 by tdeome



Groundwater Result Summary

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Legend

- Qva Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Water Utility
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Shaub-Ellison Area of Concern
- UST Area
- Approximate Lateral Extent of Remedial Excavation
- Existing Building Footprint

W, E, S, N

25 0 25

Feet

Notes:

BTEX= Benzene, Ethylbenzene, Toluene and Total Xylenes, ER = Exceedance Ration, UST = underground storage tank
Basis for Screening = Benzene (5 (µg/L), Ethylbenzene (700 (µg/L), Toluene (640 (µg/L), Total Xylenes (1600 (µg/L)
micrograms per liter (µg/L) – See Section Tables
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.

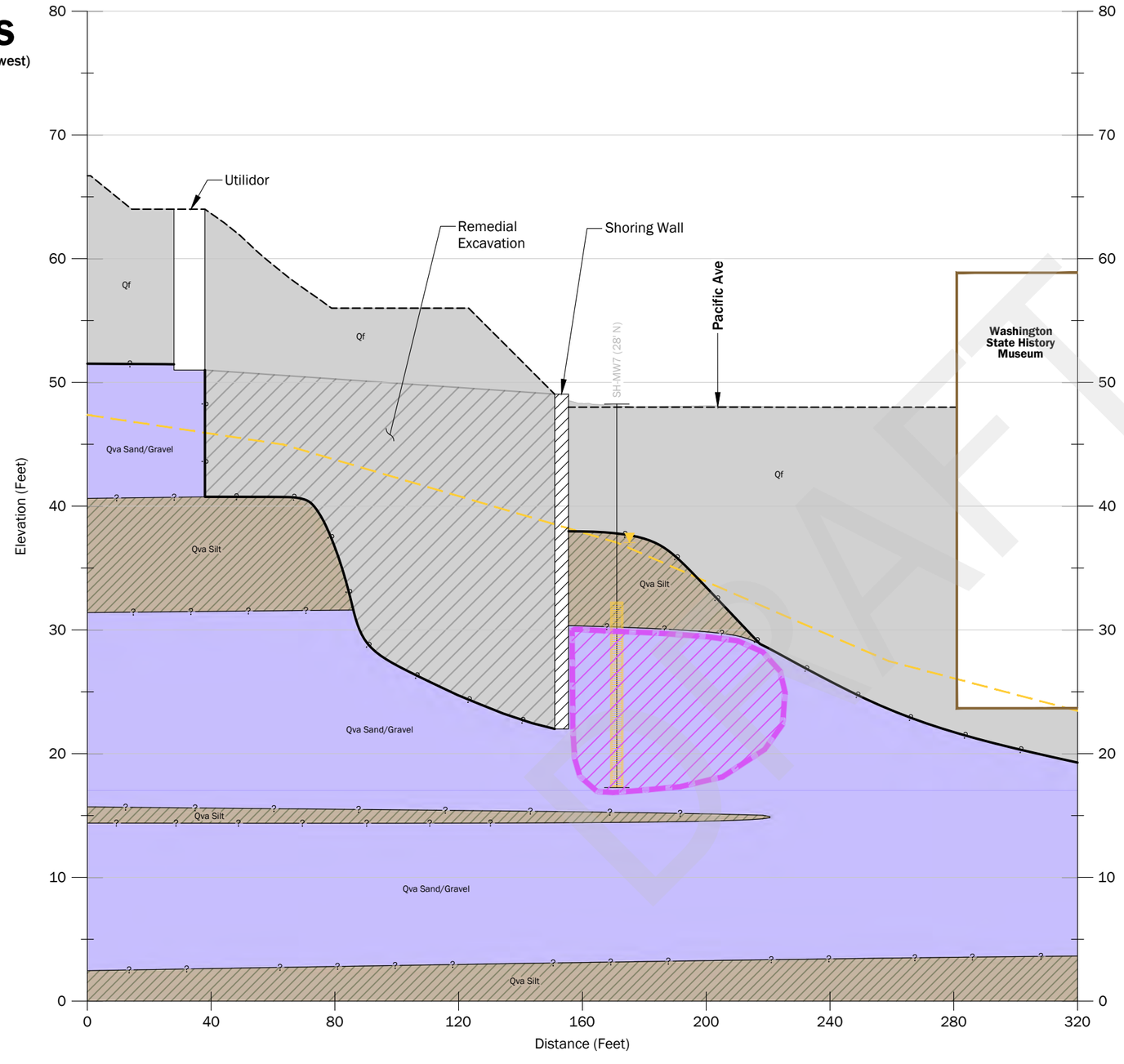
Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of BTEX in the Qvi/Qva Aquifer Shaub-Ellison

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-13



Legend

- Borehole Number (Offset Distance and Direction) — UG-MW31 (Offset 91' N)
- Qva Aquifer Water Level
- Qva Aquifer Well Screen
- Inferred Soil Contact Line
- Contact Between Qvi and Qva Units
- Existing Ground Surface
- Existing Building Location
- Qva Aquifer Potentiometric Groundwater Surface (April 2021)
- Approximate Extent of Petroleum-Related Contaminated Soil and Groundwater

Stratigraphic Units

Recent Deposits (Qf)

- Fill (Qf)

Advance Outwash Deposits (Qva)

- Silt to Sandy Silt (Qva Silt Deposits)
- Sand and Gravel (Qva Sand and Gravel Deposits)

Note

1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.

Datum: NGVD29

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

40 0 40
Horizontal Scale in Feet

10 0 10
Vertical Scale in Feet
Vertical Exaggeration: 4X

Summary of Petroleum-Related Contamination in Soil and Groundwater Cross Section AS-AS'

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 11-14

Table 12-1

Soil Investigation Summary - Snoqualmie Library

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]														
							Petroleum Hydrocarbons				VOCs										
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
Pre-1997 Agreed Order Investigation and Remedial Action																					
PS-MW1	07/21/93	AGI	Exploration	HSA	65.5	23	X	X	X		X	X	X				X			
PS-MW2	07/21/93	AGI	Exploration	HSA	64	20.5	X													
PS-MW3	07/21/93	AGI	Exploration	HSA	69	21	X													
PS-MW4	07/21/93	AGI	Exploration	HSA	69	13	X													
PS-MW5	07/21/93	AGI	Exploration	HSA	65	20.5		X	X		X									
PS-S of UST	06/27/95	AGI	Confirmation	Grab	66	--		X	X	X	X						X			
PS-S1	06/27/95	AGI	Confirmation	Grab	66	--		X	X	X	X						X			
PS-S2	06/27/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S3	06/27/95	AGI	Confirmation	Grab	67	--		X	X	X	X						X			
PS-S4	07/28/95	AGI	Confirmation	Grab	66	--		X	X	X	X						X			
PS-S5	08/02/95	AGI	Confirmation	Grab	66	--		X	X	X	X						X			
PS-S6	07/31/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S7	07/31/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S8	07/31/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S9	08/01/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S10	08/01/95	AGI	Confirmation	Grab	66	--		X	X	X	X						X			
PS-S12	08/02/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S13	08/02/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-S14	08/02/95	AGI	Confirmation	Grab	66	--		X	X	X	X						X			
PS-S15	08/02/95	AGI	Confirmation	Grab	65	--		X	X	X	X						X			
PS-SS-3	03/15/94	AGI	Confirmation	Grab	64	--		X	X											
PS-SS-4	03/15/94	AGI	Confirmation	Grab	64	--		X	X											
PS-SS-5	03/15/94	AGI	Confirmation	Grab	66	--		X			X									
PS-SS-6	03/15/94	AGI	Confirmation	Grab	66	--		X			X									
PS-SS-7	03/15/94	AGI	Confirmation	Grab	66	--		X			X									
PS-SS-8	03/15/94	AGI	Confirmation	Grab	66	--		X			X									
PS-SS-9	03/15/94	AGI	Confirmation	Grab	66	--		X			X									
PS-TP1	03/15/94	AGI	Exploration	Test Pit	65	9		X	X		X									
PS-TP3	03/15/94	AGI	Exploration	Test Pit	67	8	X													
PS-TP4	03/15/94	AGI	Exploration	Test Pit	65	8	X													
SH-MW3	07/23/93	AGI	Exploration	HSA	48.5	28	X													
SH-MW4	07/23/93	AGI	Exploration	HSA	63	29	X	X	X		X									
SH-S1	07/19/95	AGI	Confirmation	Grab	64	--			X	X										
SH-S2	07/20/95	AGI	Confirmation	Grab	64	--			X	X										

Sample Location[1]	Sample Date	Sampled By	Sample Type	Sample Method	Ground Surface Elevation[2] (feet NGVD29)	Depth of Boring (feet)	Schedule of Soil Analysis[3]													
							Petroleum Hydrocarbons				VOCs									
							TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	PAHs	SVOCs	Metals	PCBs	Organophosphorus Compounds	Pesticide
SH-SS1	05/25/93	AGI	Exploration	Hand Auger	64	1	X		X	X	X	X	X	X			X			
1997 Agreed Order Investigation																				
BL-MW6	03/21/00	URS	Exploration	HSA	67.59	38					X		X							
DMB-17	03/23/99	URS	Exploration	Direct Push	64	9		X	X	X	X				X	X				
DMB-18	03/23/99	URS	Exploration	Direct Push	64	12		X	X	X	X	X	X	X	X	X				
DMB-19	03/24/99	URS	Exploration	Direct Push	64	9		X	X	X	X				X	X				
DMB-20	03/24/99	URS	Exploration	Direct Push	64	12		X	X	X	X				X	X				
DMB-21	03/24/99	URS	Exploration	Direct Push	64	10		X	X	X	X				X	X				
PS-GW2	08/26/98	URS	Exploration	Direct Push	67	18		X	X	X	X									
PS-MW6	09/11/98	URS	Exploration	HSA	66.7	25.5		X	X	X	X									
PS-MW7	09/11/98	URS	Exploration	HSA	66.5	23		X	X	X	X									
PS-MW8	10/05/98	URS	Exploration	HSA	65	26		X	X	X	X									
2016 Agreed Order Investigation																				
A11-MW26S	06/20/19	GeoEngineers	Exploration	Sonic	66.11	30		X	X	X	X	X	X	X	X		X			
Walsh Gardner Capital Project																				
WPH-S1 N.	04/27/96	AGI	Confirmation	Grab	49	--		X	X	X	X									
WPH-S2 W.	04/27/96	AGI	Confirmation	Grab	49	--		X	X	X	X									
WPH-S3 S.	04/27/96	AGI	Confirmation	Grab	49	--		X	X	X	X									
WPH-S4 E.	04/27/96	AGI	Confirmation	Grab	49	--		X	X	X	X									
WPH-S5 Bot	04/27/96	AGI	Confirmation	Grab	49	--		X	X	X	X									
Phase IIB Utility Capital Project																				
BL-MW7	01/31/02	URS	Exploration	HSA	65.25	30.5		X	X	X	X	X	X	X			X			
Phase II B-17	01/31/02	URS	Exploration	HSA	65	25.33		X	X	X	X	X	X	X						
Phase II B-18	01/31/02	URS	Exploration	HSA	65	26		X	X	X	X	X	X	X						
Phase II B-19	02/04/02	URS	Exploration	HSA	65	26		X	X	X	X	X	X	X						
Phase II B-20	02/04/02	URS	Exploration	HSA	65	25.5		X	X	X	X	X	X	X			X			
Cherry Parkes Capital Project																				
CP-B3	04/04/02	URS	Exploration	HSA	48	6		X	X	X			X	X			X			
CP-B4A	04/04/02	URS	Exploration	HSA	48	40		X	X	X			X	X			X			
CP-B4B	04/04/02	URS	Exploration	HSA	48	6		X	X	X			X	X			X			
William W. Philip Hall Capital Project																				
AH-B01	09/02/04	GeoEngineers	Exploration	HSA	48	12.5	X		X	X	X	X	X	X	X		X			
AH-B02	09/02/04	GeoEngineers	Exploration	HSA	48	9	X								X		X			
AH-B03	10/17/06	GeoEngineers	Exploration	HSA	48	11		X	X	X	X		X		X					
AH-B05	10/17/06	GeoEngineers	Exploration	HSA	48	10.5		X	X	X	X		X		X					
AH-B06	10/17/06	GeoEngineers	Exploration	HSA	48	5.5		X	X	X	X		X		X					
AH-BOX-01	09/27/06	GeoEngineers	Exploration	Hand Auger	55	--		X	X	X	X		X		X	X	X	X		
AH-BOX-02	10/03/06	GeoEngineers	Exploration	Hand Auger	55	--		X	X	X	X		X		X	X	X	X		

Notes:

[1] Sample locations are shown on Figures 12-4 through 12-6. Location identification nomenclature was added to select wells as necessary (for example CP- was added to CP-B4A).

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Snoqualmie Library are summarized in Table 12-4. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

AGI = AGI Technologies

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

HSA = hollow stem auger

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 12-2

Groundwater Investigation Summary - Snoqualmie Library

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
Pre-1997 Agreed Order Investigation and Remedial Action																	
PS-MW1	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW1	04/27/94	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW2	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW2	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW2	04/07/94	AGI	Permanent	Qva		X	X										
PS-MW3	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW3	04/07/94	AGI	Permanent	Qva		X	X										
PS-MW4	06/10/93	AGI	Permanent	Qva		X	X		X								
PS-MW4	04/07/94	AGI	Permanent	Qva		X	X										
PS-MW5	04/06/94	AGI	Permanent	Qva		X	X		X		X	X					
PS-MW5	04/06/94	AGI	Permanent	Qva		X	X		X		X	X					
PS-MW5	04/06/94	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW5	04/06/94	AGI	Permanent	Qva		X	X		X		X	X					
PS-MW5	04/06/94	AGI	Permanent	Qva		X	X		X	X	X	X					
PS-MW5	04/06/94	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW3	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
SH-MW4	06/10/93	AGI	Permanent	Qva		X	X		X	X	X	X					
1997 Agreed Order Investigation																	
BL-GW1	08/26/98	URS	Temporary	Qvi		X	X	X	X	X	X	X					
BL-GW3_TW1	09/14/99	URS	Temporary	Qvi					X	X	X	X					
BL-GW3_TW2	09/15/99	URS	Temporary	Qvi					X	X	X	X					
BL-GW4_TW1	09/14/99	URS	Temporary	Qvi					X	X	X	X					
BL-GW4_TW2	09/14/99	URS	Temporary	Qvi					X	X	X	X					
BL-GW5	09/14/99	URS	Temporary	Qvi					X	X	X	X					
BL-MW3	10/23/98	URS	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	01/12/99	URS	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	04/20/99	URS	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	09/08/99	URS	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	04/05/00	URS	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	09/05/00	URS	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW4	10/25/99	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW4	04/03/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW4	09/06/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6	04/05/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6	04/05/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6	09/05/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6_TW1	03/21/00	URS	Temporary	Qvi					X	X	X						
BL-MW6_TW2	03/21/00	URS	Temporary	Qvi					X	X	X						

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
CR-MW12	10/25/99	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
CR-MW12	04/03/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
CR-MW12	09/06/00	URS	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
DMB-21	03/23/99	URS	Temporary	Unconfirmed		X			X	X	X	X					
PS-GW1	08/26/98	URS	Temporary	Qva		X	X	X	X	X	X	X					
PS-GW2	08/26/98	URS	Temporary	Qva		X	X	X	X	X	X	X					
PS-GW3	08/26/98	URS	Temporary	Qva		X	X	X	X	X	X	X					
PS-GW4	09/16/99	URS	Temporary	Qva					X	X	X	X					
PS-GW5	09/16/99	URS	Temporary	Qva					X	X	X	X					
PS-MW6	10/23/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW6	01/13/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW6	04/20/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW6	09/09/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	10/23/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	10/23/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	01/13/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	04/20/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	09/09/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	04/07/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	09/09/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	04/07/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	09/06/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	09/06/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	10/23/98	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	01/13/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	04/20/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	09/09/99	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	04/07/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	09/06/00	URS	Permanent	Qva		X	X	X	X	X	X	X					
SH-GW1	08/27/98	URS	Temporary	Qva					X	X	X	X					
Supplemental Investigations Under the 1997 Agreed Order																	
BL-MW3	09/11/13	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X		X		X	
BL-MW4	07/08/13	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6	07/11/13	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
CR-MW12	07/08/13	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
PS-MW6	07/11/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	07/15/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	07/15/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	07/11/13	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
2016 Agreed Order Investigation																	
A11-MW26S	09/12/19	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
A11-MW26S	03/18/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X	X				
A11-MW26S	09/01/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X	X				
BL-MW3	12/22/16	GeoEngineers	Permanent	Qvi						X	X	X					
BL-MW3	12/22/16	GeoEngineers	Permanent	Qvi						X	X	X					
BL-MW3	03/13/19	GeoEngineers	Permanent	Qvi						X	X	X					
BL-MW3	09/04/19	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	03/13/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW3	09/02/20	GeoEngineers	Permanent	Qvi		X	X	X	X	X	X	X					
BL-MW4	12/15/16	GeoEngineers	Permanent	Qvi/Qva		X				X	X	X					
BL-MW4	03/12/19	GeoEngineers	Permanent	Qvi/Qva		X				X	X	X					
BL-MW4	09/06/19	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW4	03/23/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X	X				X
BL-MW4	09/01/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X	X				
BL-MW6	12/22/16	GeoEngineers	Permanent	Qvi/Qva						X	X	X					
BL-MW6	03/13/19	GeoEngineers	Permanent	Qvi/Qva						X	X	X					
BL-MW6	09/04/19	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6	03/13/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
BL-MW6	09/02/20	GeoEngineers	Permanent	Qvi/Qva		X	X	X	X	X	X	X					
CR-MW12	12/15/16	GeoEngineers	Permanent	Qvi/Qva						X	X	X					
CR-MW12	03/13/19	GeoEngineers	Permanent	Qvi/Qva						X	X	X					
CR-MW12	09/06/19	GeoEngineers	Permanent	Qvi/Qva					X	X	X	X					
CR-MW12	03/19/20	GeoEngineers	Permanent	Qvi/Qva					X	X	X	X	X				
CR-MW12	09/01/20	GeoEngineers	Permanent	Qvi/Qva					X	X	X	X					
CR-MW12	09/02/20	GeoEngineers	Permanent	Qvi/Qva									X				
PS-MW6	12/21/16	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW6	03/13/19	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW6	09/11/19	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW6	03/18/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW6	09/02/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	12/21/16	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW7	03/12/19	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW7	09/09/19	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	03/20/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW7	09/02/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	12/21/16	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW8	03/13/19	GeoEngineers	Permanent	Qva			X	X		X	X	X					
PS-MW8	09/12/19	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	03/20/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					
PS-MW8	09/02/20	GeoEngineers	Permanent	Qva		X	X	X	X	X	X	X					

Sample Location[1]	Sample Date	Sampled By	Monitoring Well Type[2]	Groundwater Unit	Schedule of Analysis[3]												
					Petroleum Hydrocarbons				VOCs								
					TPH-HCID	TPH-G	TPH-D	TPH-O	BTEX	Petroleum VOCs	CVOCs	Other VOCs	Dissolved Gases	PAHs	SVOCs	Metals	PCBs
Phase IIB Utility Capital Project																	
BL-MW7	02/11/02	URS	Permanent	Qva		X	X	X	X	X	X	X					
Cherry Parkes Capital Project																	
CP-B4A	04/04/02	URS	Temporary	Qvi		X	X	X	X	X	X	X					

Notes:

[1] Sample locations are shown on Figures 12-4 through 12-6. Location identification nomenclature was added to select wells as necessary (for example CP- was added to CP-B4A). TW# was added to the end of select tempoary wells where groundwater samples were collected at two depth intervals in the same location.

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

[3] Chemical analytical results associated with Snoqualmie Library are summarized in Table 12-5. Chemical analytical results associated with other Areas of Concern and area-wide groundwater plumes are presented in other report sections as referenced in the text. Analytical methods for chemical analytical schedule are presented in Appendices D and H.

AGI = AGI Technologies

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

HSA = hollow stem auger

NGVD29 = National Geodetic Vertical Datum of 1929

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyl Aroclors

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

SVOCs = semi-volatile organic compounds

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = total petroleum hydrocarbons - hydrocarbon identification

URS = United Research Services Corporation (formerly)

VOCs = volatile organic compounds

Table 12-3

Well Construction Details - Snoqualmie Library

University of Washington - Tacoma Campus

Tacoma, Washington

Well Identification[1]	Well Construction Date	Installed By	Ground Surface Elevation[2] (feet NGVD29)	Top of Casing Elevation (feet NGVD29)[2]	Top of Well Screen (feet bgs)	Bottom of Well Screen (feet bgs)	Top of Well Screen Elevation (feet NGVD29)	Bottom of Well Screen Elevation (feet NGVD29)	Lithology Across Well Screen Interval	Well Status	Well Type
Pre-1997 Agreed Order Investigation and Remedial Action											
PS-MW1	07/21/93	AGI	66	65.13	6	21	60	45	Qva	Decommissioned	Permanent
PS-MW2	07/21/93	AGI	64	63.55	5	20	59	44	Qva	Decommissioned	Permanent
PS-MW3	07/21/93	AGI	69	68.45	5	20	64	49	Qva	Decommissioned	Permanent
PS-MW4	07/21/93	AGI	69	68.94	3	13	66	56	Qva	Decommissioned	Permanent
PS-MW5	07/21/93	AGI	65	64.22	10	20	55	45	Qva	Existing	Permanent
SH-MW3	07/23/93	AGI	49	48.29	13	28	36	21	Qva	Decommissioned	Permanent
SH-MW4	07/23/93	AGI	63	62.41	18	29	44	34	Qva	Decommissioned	Permanent
1997 Agreed Order Investigation											
BL-GW1	08/26/98	URS	70	--	16	19	54	51	Qvi	Decommissioned	Temporary
BL-GW3	09/14/99	URS	68	--	see below	see below	see below	see below	Qvi	Decommissioned	Temporary
BL-GW3_TW1	09/14/99	URS	68	--	14	17	54	51	Qvi	Decommissioned	Temporary
BL-GW3_TW2	09/15/99	URS	68	--	20	22	48	46	Qvi	Decommissioned	Temporary
BL-GW4	10/12/99	URS	68	--	see below	see below	see below	see below	Qvi	Decommissioned	Temporary
BL-GW4_TW1	10/12/99	URS	68	--	18	21	50	47	Qvi	Decommissioned	Temporary
BL-GW4_TW2	10/12/99	URS	68	--	21	24	47	44	Qvi	Decommissioned	Temporary
BL-GW5	03/20/00	URS	66	--	21	23	45	43	Qvi	Decommissioned	Temporary
BL-MW3	09/11/98	URS	67.59	66.74	10	25	57	42	Qvi	Existing	Permanent
BL-MW4	10/12/99	URS	48.0	47.80	11	31	37	17	Qvi/Qva	Existing	Permanent
BL-MW6	03/21/00	URS	67.59	67.09	33	38	34	29	Qvi/Qva	Existing	Permanent
BL-MW6_TW1	03/21/00	URS	68	--	21	25	47	43	Qvi	Decommissioned	Temporary
BL-MW6_TW2	03/21/00	URS	68	--	34	38	34	30	Qvi	Decommissioned	Temporary
CR-MW12	10/12/99	URS	48	47.54	10	25	38	23	Qvi/Qva	Existing	Permanent
DMB-21	03/24/99	URS	64	--	7	10	57	54	Unconfirmed	Decommissioned	Temporary
PS-GW1	08/26/98	URS	66	--	8	10	58	56	Qva	Decommissioned	Temporary
PS-GW2	08/26/98	URS	67	--	16	18	51	49	Qva	Decommissioned	Temporary
PS-GW3	08/26/98	URS	66	--	11	13	55	53	Qva	Decommissioned	Temporary
PS-GW4	09/16/99	URS	66	--	10	12	56	54	Qva	Decommissioned	Temporary
PS-GW5	09/16/99	URS	67	--	23	25	44	42	Qva	Decommissioned	Temporary
PS-MW6	09/11/98	URS	66.70	66.20	11	26	57	42	Qva	Existing	Permanent
PS-MW7	09/11/98	URS	66.50	66.03	8	23	59	44	Qva	Existing	Permanent
PS-MW8	10/05/98	URS	65	64.84	11	26	54	39	Qva	Existing	Permanent
SH-GW1	08/27/98	URS	48	--	8	11	40	37	Qva	Decommissioned	Temporary
2016 Agreed Order Investigation											
A11-MW26S	06/20/19	GeoEngineers	66.11	65.73	10	25	56	41	Qvi/Qva	Existing	Permanent
Phase IIB Utility Capital Project											
BL-MW7	01/31/02	URS	65.25	65.13	15	30	50	35	Qva	Decommissioned	Permanent
Cherry Parkes Capital Project											
CP-B4A	04/04/02	URS	48	--	8	10	40	38	Qvi	Decommissioned	Temporary

Notes:

[1] Well locations are shown on Figures 12-4 through 12-6. Location identification nomenclature was added to select wells as necessary (for example CP- was added to CP-B4A). TW# was added to the end of select temporary wells where groundwater samples were collected at two depth intervals in the same location.

[2] Ground surface elevation is based on estimates from topographic surveys, Pierce County Light Detection and Range (LiDAR) 2010 Survey or individual surveys for a monitoring well. Select wells were modified over time during construction. The current elevation is shown. See surveys and summary of changes in Appendix K.

AGI = AGI Technologies

bgs = below ground surface

NGVD29 = National Geodetic Vertical Datum of 1929

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

URS = United Research Services Corporation (formerly)

Table 12-4

Summary of Soil Chemical Analytical Results - Snoqualmie Library

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																				
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	cVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Pre-1997 Agreed Order Investigation and Remedial Action																										
PS-MW2	PS-B2-5	05/24/93	Exploration	5 - 5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW1	PS-B5-2.5	05/24/93	Exploration	2.5 - 2.5	Removed	G,D	750	6,200	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW1	PS-B1-7.5	05/24/93	Exploration	7.5 - 7.5	Removed	G,D	89	180	--	*0.050 U*	0.050 U	0.050 U	0.050 U	--	--	--	*0.050 U*	--	--	ND	--	--	0.51	0.25 U	2.1	--
PS-MW1	PS-B1-12.5	05/24/93	Exploration	12.5 - 12.5	Removed	G,D	600	7,000	--	*0.025 U*	0.025 U	0.025 U	0.050 U	--	--	--	*0.050 U*	--	--	ND	--	--	0.92	0.25 U	1.8	--
PS-MW2	PS-B2-7.5	05/24/93	Exploration	7.5 - 7.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW3	PS-B3-5	05/25/93	Exploration	5 - 5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW3	PS-B3-10	05/25/93	Exploration	10 - 10	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW4	PS-B4-2.5	05/25/93	Exploration	2.5 - 2.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW4	PS-B4-5	05/25/93	Exploration	5 - 5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW5	PS-MW5-10	04/01/94	Exploration	10 - 10	Present	--	5 U	10 U	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW5	PS-MW5-12.5	04/01/94	Exploration	12.5 - 12.5	Present	--	310	1,100	--	*0.025 U*	0.025 U	0.068	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-S1	PS-S1	06/27/95	Confirmation	11 - 11	Present	--	1,000	3,700	230 U	*0.029 U*	0.097	0.40	0.85	--	--	--	--	--	--	--	--	--	--	--	25	--
PS-S of UST	PS-S-UST-1	06/27/95	Confirmation	8.2 - 8.2	Removed	--	3,100	14,000	920 U	0.034	0.27	1.0	2.3	--	--	--	--	--	--	--	--	--	--	--	1.7 U	--
PS-S2	PS-S2	06/27/95	Confirmation	12.5 - 12.5	Present	--	5.6 U	11 U	45 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S3	PS-S3	06/27/95	Confirmation	11 - 11	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S4	PS-S4 @ 8	07/28/95	Confirmation	8 - 8	Present	--	6.0 U	12 U	48 U	*0.03 U*	0.03 U	0.03 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	2.0	--
PS-S5	PS-S5 @15	08/02/95	Confirmation	15 - 15	Present	--	23	30	45 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S6	PS-S6 @ 16	07/31/95	Confirmation	16 - 16	Present	--	670	1,000	90 U	*0.028 U*	0.056	0.22	0.55	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S7	PS-S7 @ 18	07/31/95	Confirmation	18 - 18	Present	--	840	3,900	220 U	*0.028 U*	0.10	0.30	0.81	--	--	--	--	--	--	--	--	--	--	--	2.8	--
PS-S8	PS-S8 @ 21	07/31/95	Confirmation	21 - 21	Present	--	5.5 U	11 U	44 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S9	PS-S9 @ 18	08/01/95	Confirmation	18 - 18	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S10	PS-S10 @ 16	08/01/95	Confirmation	16 - 16	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S10	PS-S11 @16	08/01/95	Confirmation	16 - 16	Present	--	5.7 U	11 U	45 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S12	PS-S12 @ 9	08/02/95	Confirmation	9 - 9	Present	--	6.0 U	12 U	48 U	*0.030 U*	0.030 U	0.030 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S13	PS-S13 @ 16	08/02/95	Confirmation	16 - 16	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S14	PS-S14 @ 9	08/02/95	Confirmation	9 - 9	Present	--	5.7 U	11 U	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-S15	PS-S15 @ 7	08/02/95	Confirmation	7 - 7	Present	--	8.5	11	46 U	*0.029 U*	0.029 U	0.029 U	0.029 U	--	--	--	--	--	--	--	--	--	--	--	25 U	--
PS-SS-3	SS-3	03/15/94	Confirmation	6 - 6	Present	--	5 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-SS-4	SS-4	03/15/94	Confirmation	6 - 6	Present	--	5 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-SS-5	SS-5	03/15/94	Confirmation	7 - 7	Present	--	5 U	--	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-SS-6	SS-6	03/15/94	Confirmation	5 - 5	Present	--	2,700	--	--	*0.025 U*	0.025 U	0.51	2.6	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-TP3	SS-13	03/15/94	Exploration	8 - 8	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-SS-7	SS-7	03/15/94	Confirmation	7 - 7	Removed	--	1,200	--	--	*0.025 U*	0.025 U	0.20	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-SS-8	SS-8	03/15/94	Confirmation	7 - 7	Removed	--	510	--	--	*0.025 U*	0.025 U	0.025 U	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-SS-9	SS-9	03/15/94	Confirmation	7 - 7	Removed	--	5 U	--	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-TP1	SS-2	03/15/94	Exploration	6 - 6	Removed	--	5 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-TP1	SS-1	03/15/94	Exploration	9 - 9	Removed	--	5 U	10 U	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-TP4	SS-14	03/15/94	Exploration	8 - 8	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW3	SH-B3-10	05/23/93	Exploration	10 - 10	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW3	SH-B3-17.5	05/23/93	Exploration	17.5 - 17.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW4	SH-B4 @ 20.5	05/28/93	Exploration	20.5 - 20.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW4	SH-B4 @ 28	05/28/93	Exploration	28 - 28	Historical	G,D	40	190	--	*0.025 U*	0.025 U	0.025 U	0.025 U	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S1	SH-S1 @ 2.5	07/19/95	Confirmation	2.5 - 2.5	Present	--	--	11 U	43 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-S2	SH-S2 @ 2.5	07/20/95	Confirmation	2.5 - 2.5	Present	--	--	53	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-SS1	SS1	05/25/93	Exploration	1 - 1	Removed	D,O	--	410	1,800	*0.050 U*	0.050 U	0.050 U	0.050 U	--	--	--	*0.050 U*	--	--	ND	--	--	7.6	1.3	200	--
1997 Agreed Order Investigation																										
BL-MW6	BL-MW6-30_20000321	03/21/00	Exploration	30 - 30	Present	--	--	--	--	*0.100 U*	0.100 U	0.100 U	0.200 U	--	--	--	--	--	--	ND	--	--	--	--	--	--
DMB-17	DMB-17-6	03/23/99	Exploration	6 - 6	Present	--	5.00 U	10.0 U	25.0 U	*0.050 U*	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.051 U	--	--	--	--
DMB-18	DMB-18-6	03/23/99	Exploration	6 - 6	Present	--	5.00 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DMB-18	DMB-18-9	03/23/99	Exploration	9 - 9	Present	--	5.00 U	10.0 U	25.0 U	*0.050 U*	0.050 U	0.0504	0.100 U	0.135 J	*0.100 U*	0.100 U	*0.100 U*	--	0.100 U	ND	0.417 J	0.051 U	--	--	--	--
DMB-19	DMB-19-6	03/24/99	Exploration	6 - 6	Present	--	5.00 U	10.0 U	25.0 U	*0.050 U*	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.051 U	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																				
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs									Metals			
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DMB-20	DMB-20-6	03/24/99	Exploration	6 - 6	Present	--	5.00 U	10.0 U	25.0 U	*0.050 U*	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.051 U	--	--	--	--
DMB-20	DMB-20-9	03/24/99	Exploration	9 - 9	Present	--	5.00 U	10.0 U	25.0 U	*0.050 U*	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.051 U	--	--	--	--
DMB-21	DMB-21-7	03/24/99	Exploration	7 - 7	Present	--	5.00 U	10.0 U	25.0 U	*0.050 U*	0.050 U	0.050 U	0.100 U	--	--	--	--	--	--	--	0.100 U	0.051 U	--	--	--	--
PS-GW2	PS-GW2-12_19980826	08/26/98	Exploration	12 - 12	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-GW2	PS-GW2-17S0_19980826	08/26/98	Exploration	17 - 17	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW6	PS-MW6-2.5_19980911	09/11/98	Exploration	2.5 - 2.5	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW6	PSMW6-12.5_19980911	09/11/98	Exploration	12.5 - 12.5	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW6	PS-MW6-15_19980911	09/11/98	Exploration	15 - 15	Present	--	5.0 U	**10.9**	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW7	PS-MW7-12.5_19980911	09/11/98	Exploration	12.5 - 12.5	Present	--	**946**	**5,660**	125 U	*0.200 U*	0.200 U	*2.0 U*	*2.0 U*	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW7	PS-MW7-15_19980911	09/11/98	Exploration	15 - 15	Present	--	**71.3**	**485**	25.0 U	*0.0500 U*	0.0500 U	0.100 U	0.200 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW8	PS-MW8-20_19981005	10/05/98	Exploration	20 - 20	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW8	PS-MW8-22.5_19981005	10/05/98	Exploration	22.5 - 22.5	Present	--	5.0 U	10.0 U	25.0 U	*0.0500 U*	0.0500 U	0.0500 U	0.100 U	--	--	--	--	--	--	--	--	--	--	--	--	--
2016 Agreed Order Investigation																										
A11-MW26S	A11-MW26S-5-6	06/20/19	Exploration	5 - 6	Present	--	5.2 U	30 U	60 U	0.00096 U	0.0048 U	0.00096 U	0.0019 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	0.00096 U	ND	**0.0087**	0.0060 U	12 U	0.60 U	6.0 U	--
A11-MW26S	A11-MW26S-9-10	06/20/19	Exploration	9 - 10	Present	--	4.8 U	28 U	56 U	0.00079 U	0.0040 U	0.00079 U	0.0016 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	0.00079 U	ND	0.00079 U	--	--	--	--	--
A11-MW26S	A11-MW26S-14-15	06/20/19	Exploration	14 - 15	Present	--	4.2 U	27 U	54 U	0.00078 U	0.0039 U	0.00078 U	0.0016 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	ND	0.00078 U	--	--	--	--	--
A11-MW26S	A11-MW26S-19-20	06/20/19	Exploration	19 - 20	Present	--	6.5 U	28 U	56 U	0.00087 U	0.0044 U	0.00087 U	0.0017 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	ND	0.00087 U	--	--	--	--	--
A11-MW26S	A11-MW26S-22-23	06/20/19	Exploration	22 - 23	Present	--	*63 U*	**45**	55 U	0.00075 U	0.0037 U	0.00075 U	0.0015 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	**DET**	0.00075 U	--	--	--	--	--
A11-MW26S	A11-MW26S-24-25	06/20/19	Exploration	24 - 25	Present	--	5.0 U	28 U	55 U	0.00092 U	0.0046 U	0.00092 U	0.0018 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	**DET**	0.00092 U	--	--	--	--	--
A11-MW26S	A11-MW26S-29-30	06/20/19	Exploration	29 - 30	Present	--	5.4 U	28 U	55 U	0.00084 U	0.0042 U	0.00084 U	0.0017 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	**DET**	0.00084 U	--	--	--	--	--
Walsh Gardner Capital Project																										
WPH-S1 N.	T08-S1 N.	04/27/96	Confirmation	5.5 - 5.5	Present	--	5.6 U	11 U	**44**	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
WPH-S2 W.	T08-S2 W.	04/27/96	Confirmation	5.5 - 5.5	Present	--	5.6 U	11 U	**61**	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
WPH-S3 S.	T08-S3 S.	04/27/96	Confirmation	5.5 - 5.5	Present	--	5.5 U	11 U	44 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
WPH-S4 E.	T08-S4 E.	04/27/96	Confirmation	5.5 - 5.5	Present	--	5.6 U	11 U	45 U	*0.028 U*	0.028 U	0.028 U	0.028 U	--	--	--	--	--	--	--	--	--	--	--	--	--
WPH-S5 Bot	T08-S5 BOT	04/27/96	Confirmation	6.5 - 6.5	Present	--	6.1 U	12 U	49 U	*0.030 U*	0.030 U	0.030 U	0.030 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Phase IIB Utility Capital Project																										
BL-MW7	BLMW-7-2A	01/31/02	Exploration	2 - 2	Removed	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.49	--	226	--
BL-MW7	BLMW-7-7B	01/31/02	Exploration	7 - 7	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
BL-MW7	BLMW-7-17B	01/31/02	Exploration	17 - 17	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
Phase II B-17	PHASE II B-17-6-6.5	01/31/02	Exploration	6 - 6.5	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
Phase II B-17	PHASE II B-17-13-13.5	01/31/02	Exploration	13 - 13.5	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
Phase II B-18	PHASE II B-18-5-5.5	01/31/02	Exploration	5 - 5.5	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
Phase II B-18	PHASE II B-18-15.5-16	01/31/02	Exploration	15.5 - 16	Removed	--	**13.9**	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	**0.134**	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	**3.80**	--	--	--	--	--
Phase II B-19	PHASE II B-19-5A	02/04/02	Exploration	5 - 5	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
Phase II B-19	PHASE II B-19-15A	02/04/02	Exploration	15 - 15	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	0.100 U	--	--	--	--	--
Phase II B-20	PHASE II B-20-3A	02/04/02	Exploration	3 - 3	Removed	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.93	--	1.8	--
Phase II B-20	PHASE II B-20-5A	02/04/02	Exploration	5 - 5	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	**2.42**	--	--	--	--	--
Phase II B-20	PHASE II B-20-10A	02/04/02	Exploration	10 - 10	Removed	--	5.00 U	10.0 U	25.0 U	*0.100 U*	0.100 U	0.100 U	0.200 U	*0.100 U*	*0.100 U*	--	--	--	0.100 U	ND	**0.209**	--	--	--	--	--
Cherry Parkes Capital Project																										
CP-B3	CP-B3-1B_20020404	04/04/02	Exploration	1 - 1	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.17**	--	**4.46**	--
CP-B3	CP-B3-5B_20020404	04/04/02	Exploration	5 - 5	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
CP-B4A	CP-B4A-1_20020404	04/04/02	Exploration	1 - 1	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	ND	--	--	**2.07**	--	**2.60**	--
CP-B4A	CP-B4A-5A_20020404	04/04/02	Exploration	5 - 5	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
CP-B4A	CP-B4A-15B_20020404	04/04/02	Exploration	15 - 15	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
CP-B4A	CP-B4A-35A_20020404	04/04/02	Exploration	35 - 35	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
CP-B4A	CP-B4A-40A_20020404	04/04/02	Exploration	40 - 40	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.63**	--	**3.91**	--
CP-B4B	CP-B4B-1B_20020404	04/04/02	Exploration	1 - 1	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.47**	--	**2.49**	--
CP-B4B	CP-B4B-5B_20020404	04/04/02	Exploration	5 - 5	Present	--	5.00 U	10.0 U	25.0 U	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
William W. Philip Hall Capital Project																										
AH-B01	B1-3.0	09/02/04	Exploration	3 - 3	Present	**0**	--	**250**	**337**	--	--	--	--	--	--	--	--	--	--	--	0.0100 U	**0.094**	**4.81**	0.5 U	**56.6**	--
AH-B01	B1-5.5	09/02/04	Exploration	5.5 - 5.5	Present	ND	--	--	--	0.0015 U	0.0015 U	0.004 U	0.01 U	0.005 U	0.005 U	--	0.00125 U	0.001 U	--	ND	0.005 U	0.0076 U	**2.45**	0.5 U	**2.42**	--
AH-B02	B2-3.0	09/02/04	Exploration	3 - 3	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.56**	0.5 U	**2.77**	--
AH-B02	B2-3.3	09/02/04	Exploration	3.3 - 3.3	Present	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0100 U	0.0076 U	--	--	--	--
AH-B02	B2-5.5	09/02/04	Exploration	5.5 - 5.5	Present	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0100 U	0.0076 U	**2.11**	0.5 U	**1.63**	--
AH-B03	B03-061017-01	10/17/06	Exploration	2.5 - 4	Present	--	3.4 U	28 U	55 U	*0.0024 U*	0.0063 U	0.0061 U	0.013 U	--	--	--	--	--	--	ND	--	**0.00010**	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Sample Type	Sample Interval (feet bgs)	Sample Status	Soil Analytical Results (mg/kg)[2]																			
						Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals		
						TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene[4]	Toluene	Ethylbenzene	Total Xylenes[5]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[6]	Total cPAH TEQ[7]	Arsenic	Cadmium	Lead	Total PCB Aroclors[8]
Proposed Cleanup Level[9] (PCUL)						n/a	30	2,000	2,000	0.0017	0.27	0.34	0.83	0.072	0.071	0.5	0.0016	560	8,000	Varies	0.24	0.19	20	80	250	0.5
Soil Screening Level for Protection of Vapor Intrusion[10]						NE	100	250	NE	10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AH-B03	B03-061017-02	10/17/06	Exploration	5 - 6	Present	--	3.6 U	26 U	52 U	*0.0025 U*	0.0066 U	0.0064 U	0.013 U	--	--	--	--	--	--	ND	--	0.00037 U	--	--	--	--
AH-B03	B03-061017-03	10/17/06	Exploration	7.5 - 8.5	Present	--	3.7 U	27 U	53 U	*0.0026 U*	0.0068 U	0.0066 U	0.014 U	--	--	--	--	--	--	ND	--	0.00038 U	--	--	--	--
AH-B05	B05-061017-01	10/17/06	Exploration	2.5 - 3.5	Present	--	3.8 U	26 U	53 U	*0.0027 U*	0.0071 U	0.0069 U	0.014 U	--	--	--	--	--	--	ND	--	0.00034 U	--	--	--	--
AH-B05	B05-061017-02	10/17/06	Exploration	5 - 6.5	Present	--	3.5 U	27 U	54 U	*0.0025 U*	0.0065 U	0.0063 U	0.013 U	--	--	--	--	--	--	ND	--	0.00035 U	--	--	--	--
AH-B06	B06-061017-01	10/17/06	Exploration	2.5 - 3	Present	--	4.1 U	26 U	53 U	*0.0029 U*	0.0076 U	0.0074 U	0.015 U	--	--	--	--	--	--	ND	--	0.00034 U	--	--	--	--
AH-B06	B06-061017-02	10/17/06	Exploration	5 - 5.5	Present	--	4.2 U	27 U	53 U	*0.003 U*	0.0079 U	0.0076 U	0.016 U	--	--	--	--	--	--	ND	--	**0.00010**	--	--	--	--
AH-BOX-01	BOX-01-01	09/27/06	Exploration	0 - 4	Removed	--	4.3 U	26 U	52 U	*0.003 U*	0.0079 U	0.0077 U	0.016 U	--	--	--	--	--	--	ND	0.0000062 U	**0.00012**	**3.6**	0.004 U		0.056 U
AH-BOX-01	BOX-01-02	09/27/06	Exploration	0 - 4	Removed	--	4.0 U	26 U	52 U	*0.0028 U*	0.0074 U	0.0072 U	0.015 U	--	--	--	--	--	--	ND	0.0000059 U	**0.00054**	**3.1**	0.0042 U		0.056 U
AH-BOX-02	BOX-02-01-100306	10/03/06	Exploration	0 - 4	Removed	--	2.6 U	28 U	57 U	*0.0018 U*	0.0048 U	0.0047 U	0.0098 U	--	--	--	--	--	--	ND	--	**0.0081**	**3.2**	0.0043 U		0.0063 U

Notes:

[1] Sample locations are shown on Figures 12-4 through 12-6. Location identification nomenclature was added to select wells as necessary (for example CP- was added to CP-B4A).

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical result list is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

[4] Benzene may have been analyzed as full volatile organic compound (VOC) method and/or BTEX only. The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[5] Sum of m,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[6] Naphthalene may have been analyzed as a VOC, polycyclic aromatic hydrocarbon (PAH), and/or semi-volatile organic compound (SVOC). The lowest PQL or the greatest detected concentration is shown.

[7] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations.

[8] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[9] Soil PCUL is based on the lowest value for protection of direct contact and groundwater as drinking water within the saturated zone and adjusted for PQL and Natural Background (see Tables 3-1 and 3-2).

[10] Soil screening level based on Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-6).

-- = not tested

1,2,4-TMB = 1,2,4-trimethylbenzene

1,3,5-TMB = 1,3,5-trimethylbenzene

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

DET = detected

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons

J = estimated value by laboratory

mg/kg = milligram per kilogram

MTBE = methyl tert-butyl ether

ND = not DET

NE = not established

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = Total Petroleum Hydrocarbons - Hydrocarbon Identification

U = analyte was ND at or greater than the listed reporting limit

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

Italic font type indicates the non-detect result is greater than the PCUL.

Gray text indicates that soil represented by the sample has been removed and that the sample result no longer represents current conditions.

Shading indicates that the DET concentration is greater than the PCUL.

Shading indicates that the DET concentration is greater than the screening level for vapor intrusion and/or the PCUL.

Table 12-5

Summary of Groundwater Chemical Analytical Results - Snoqualmie Library

University of Washington - Tacoma Campus

Tacoma, Washington

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)[8]	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																						
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs										Metals					
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene	CVOCs	Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal -Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE	NE
Pre-1997 Agreed Order Investigation and Remedial Action																													
PS-MW1	PS-MW1-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	**13,000**	**55,000**	--	1 U	**1**	**1**	1 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW1	PS-MW1-4/94	04/27/94	Qva	Permanent	n/a	n/a	--	**29000**	**88,000**	--	1 U	1 U	1 U	1 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW2	FC-MW2-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	1 U	1 U	1 U	1 U	--	--	--	1 U	--	--	ND	--	--	--	--	--	--	--
PS-MW2	PS-MW2-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	1 U	**1**	1 U	1 U	--	--	--	1 U	--	--	ND	--	--	--	--	--	--	--
PS-MW2	PS-MW2	04/07/94	Qva	Permanent	n/a	n/a	--	*1,000 U*	**1,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW3	PS-MW3-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW3	PS-MW3-4/94	04/07/94	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW4	PS-MW4 6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW4	PS-MW4	04/07/94	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW5	PS-MW5-19940406	04/06/94	Qva	Permanent	n/a	n/a	--	**5,000**	**21,000**	--	**4**	--	--	**5**	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
PS-MW5	PS-MW5-19940406-D	04/06/94	Qva	Permanent	n/a	n/a	--	**13,000**	**53,000**	--	**4**	--	--	**4**	--	--	--	--	--	--	**DET**	--	--	--	--	--	--	--
PS-MW5	PS-MW5-4/94	04/06/94	Qva	Permanent	n/a	n/a	--	**5,000**	**21,000**	--	**4**	1 U	1 U	**5**	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
PS-MW5	PS-MW6-4/94	04/06/94	Qva	Permanent	n/a	n/a	--	**13,000**	**53,000**	--	**4**	1 U	1 U	**4**	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
SH-MW3	SH-MW3-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	*1,000 U*	*1,000 U*	--	1 U	**1**	1 U	1 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
SH-MW4	SH-MW4-6/93	06/10/93	Qva	Permanent	n/a	n/a	--	**4,000**	**38,000**	--	**1**	1 U	1 U	1 U	--	--	--	1 U	--	--	**DET**	--	--	--	--	--	--	--
1997 Agreed Order Investigation																													
BL-GW1	BL-GW1_19980826	08/26/98	Qvi	Temporary	n/a	n/a	--	50 U	**1,040**	500 U	**1.14**	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-GW3_TW1	BL-GW3-14 _19990914	09/14/99	Qvi	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-GW3_TW2	BL-GW3-20 _19990915	09/15/99	Qvi	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-GW4_TW1	BL-GW4-18 _19990914	09/14/99	Qvi	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-GW4_TW2	BL-GW4- 21 _19990914	09/14/99	Qvi	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-GW5	BL-GW5-21_19990914	09/14/99	Qvi	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW3	BL-MW3_19981023	10/23/98	Qvi	Permanent	n/a	n/a	--	50 U	**770**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW3	BL-MW3_19990112	01/12/99	Qvi	Permanent	n/a	n/a	--	50 U	**790**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW3	BL-MW3_19990420	04/20/99	Qvi	Permanent	n/a	n/a	--	50 U	**317**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	**2.93**	--	--	--	--	--	--
BL-MW3	BL-MW3_19990908	09/08/99	Qvi	Permanent	n/a	n/a	--	**105**	**765**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW3	BL-MW3_20000405	04/05/00	Qvi	Permanent	n/a	n/a	--	250 U	**706**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW3	BL-MW3_20000905	09/05/00	Qvi	Permanent	n/a	n/a	--	**55.6 J**	**622**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW4	BL-MW4_19991025	10/25/99	Qvi/Qva	Permanent	14.80	33.00	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
BL-MW4	BL-MW4_20000403	04/03/00	Qvi/Qva	Permanent	13.08	34.72	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
BL-MW4	BL-MW4_20000906	09/06/00	Qvi/Qva	Permanent	14.93	32.87	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
BL-MW6	BL-MW6_20000405	04/05/00	Qvi/Qva	Permanent	15.67	51.44	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW6	BL-MW6-DUP_20000405	04/05/00	Qvi/Qva	Permanent	n/a	n/a	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW6	BL-MW6_20000905	09/05/00	Qvi/Qva	Permanent	16.49	50.62	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
BL-MW6_TW1	BL-MW6-25_20000321	03/21/00	Qvi	Temporary	n/a	n/a	--	--	--	--	*10 U*	10 U	10 U	10 U	--	--	--	*10 U*	--	--	**DET**	--	--	--	--	--	--	--
BL-MW6_TW2	BL-MW6-38_20000321	03/21/00	Qvi	Temporary	n/a	n/a	--	--	--	--	*10 U*	10 U	10 U	10 U	--	--	--	*10 U*	--	--	**DET**	--	--	--	--	--	--	--
CR-MW12	CR-MW12_19991025	10/25/99	Qvi/Qva	Permanent	13.40	34.14	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
CR-MW12	CR-MW12_20000403	04/03/00	Qvi/Qva	Permanent	11.80	35.74	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
CR-MW12	CR-MW12_20000906	09/06/00	Qvi/Qva	Permanent	13.00	34.54	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
DMB-21	DMB-21-W	03/23/99	Unconfirmed	Temporary	n/a	n/a	--	50.0 U	--	--	**1.38**	**1.29**	1.00 U	2.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-GW1	PS-GW1-9_19980826	08/26/98	Qva	Temporary	n/a	n/a	--	50 U	**840**	**846**	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-GW2	PS-GW2-17_19980826	08/26/98	Qva	Temporary	n/a	n/a	--	**5,110**	**57,400**	*5,500 U*	5.00 U	5.00 U	5.00 U	15.0 U	5.00 U	5.00 U	*5.00 U*	*5.00 U*	--	5.00 U	**DET**	5.00 U	--	--	--	--	--	--
PS-GW3	PS-GW3-13_19980826	08/26/98	Qva	Temporary	n/a	n/a	--	**199**	**290**	500 U	**5.37**	**1.54**	**10.7**	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-GW4	PS-GW4-10_19990916	09/16/99	Qva	Temporary	n/a	n/a	--	--	--	--	**3.30**	**7.80**	1.00 U	**5.43**	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
PS-GW5	PS-GW5-23_19990916	09/16/99	Qva	Temporary	n/a	n/a	--	--	--	--	**1.87**	**10.1**	**1.38**	**8.27**	**2.43**	1.00 U	*1.00 U*	1.00 U	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW6	PS-MW6 _19981023	10/23/98	Qva	Permanent	18.83	47.37	--	**436**	**2,300**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	**2.41**	1.00 U	--	--	--	1.00 U	**DET**	**8.84**	--	--	--	--	--	--
PS-MW6	PS-MW6 _19990113	01/13/99	Qva	Permanent	16.34	49.86	--	**137**	**1,070**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW6	PS-MW6 _19990420	04/20/99	Qva	Permanent	17.15	49.05	--	50 U	**524**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	**DET**	1.00 U	--	--	--	--	--	--
PS-MW6	PS-MW6 _19990909	09/09/99	Qva	Permanent	19.70	48.50	--	**358**	**1,490 J**	**500**	1.00 U	1.00 U	1.00 U	2.00 U	**7.6**	1.00 U	--	--	--	**2.9**	**DET**	1.00 U	--	--	--	--	--	--
PS-MW7	PS-MW7 (DUP)_19981023	10/23/98	Qva	Permanent	n/a	n/a	--	**1,320**	**5,820**	500 U	**1.9**	1.00 U	**2.88**	**9.79**	**27**	**3.6**	--	--	--	**4.99**	**DET**	**182**	--	--	--	--	--	--
PS-MW7	PS-MW7_19981023	10/23/98	Qva	Permanent	14.48	51.55	--	**1,210**	**9,590**	500 U	**1.96**	1.00 U	**3.23**	**9.94**	**26.7**	**3.46**	--	--	--	**5.08**	**DET**	**202**	--	--	--	--	--	--
PS-MW7	PS-MW7_19990113	01/13/99	Qva	Permanent	13.62	52.41	--	**3,880**	**36,100**	*2,500 U*	1.00 U	1.00 U	**2.43**	**2.86**	**12.8**	**2.86**	--	--	--	**1.42**	**DET**	**118**	--	--	--	--	--	--
PS-MW7	PS-MW7_19990420	04/20/99	Qva	Permanent	13.85	52.18	--	**778 J**	**2,870**	500 U	**1.12**	1.00 U	**5.02**	**2.76**	**13**	**2.34**	--	--	--	**2.26**	**DET**	**84.4**	--	--	--	--	--	--
PS-MW7	PS-MW7_19990909	09/09/99	Qva	Permanent	14.60	51.43	--	**376**	**1,390,000 J**	**23,300 J**	**1.16**	1.00 U	**3.52**	**2.41**	**7.3**	**1.58**	--	--	--	**1.69**	**DET**	**53.3**	--	--	--	--	--	--
PS-MW7	PS-MW7_20000407	04/07/00	Qva	Permanent	13.45	52.58	--	**395**	**1,500**	500 U	1.00 U	1.00 U	**2.07**	2.00 U	**3.72**	**1.26**	--	--	--	**1.1**	**DET**	**11**	--	--	--	--	--	--
PS-MW7	PS-MW7 (DUP)_20000906	09/06/00	Qva	Permanent	n/a	n/a	--	**371**	**2,570**	*1,500 U*	**1.28**	1.00 U	**4.11**	2.00 U	**1.69**	1.00 U	--	--	--	**1.41**	**DET**	**31.2**	--	--	--	--	--	--
PS-MW7	PS-MW7_20000906	09/06/00	Qva	Permanent	14.68	51.35	--	**364**	**2,660**	*1,500 U*	**1.26**	1.00 U	**4.1**	2.00 U	**1.59**	1.00 U	--	--	--	**1.37**	**DET**	**30.9**	--	--	--	--	--	--

Sample Location[1]	Sample Identification	Sample Date	Groundwater Unit	Monitoring Well Type	Depth to Water (feet below TOC)	Water Level Elevation (feet NGVD29)	Groundwater Chemical Analytical Results[2] (µg/L)																					
							Petroleum Hydrocarbons				BTEX Compounds				Petroleum-Related VOCs						CVOCs	PAHs		Metals				
							TPH-HCID	TPH-G[3]	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes[4]	1,2,4-TMB	1,3,5-TMB	EDB	EDC	MTBE	n-Propylbenzene		Naphthalene[5]	Total cPAH TEQ[6]	Dissolved Metal - Arsenic	Total Metal - Arsenic	Dissolved Metal -Lead	Total Metal - Lead	Total PCB Aroclors[7]
Proposed Cleanup Level[8] (PCUL; µg/L)							n/a	800	500	500	5	640	700	1,600	80	80	0.05	4.8	24	800	Varies	160	0.2	8	8	15	15	0.22
Groundwater Screening Level for Protection of Vapor Intrusion[9] (µg/L)							n/a	30,000	30,000	NE	2.4	15,000	2,800	320	240	170	0.3	3.5	860	2,300	Varies	8.9	NE	NE	NE	NE	NE	NE
PS-MW8	PS-MW8 _19981023	10/23/98	Qva	Permanent	20.73	44.11	--	**55.3**	**829**	**512**	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19990113	01/13/99	Qva	Permanent	18.12	46.72	--	50 U	**425**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19990420	04/20/99	Qva	Permanent	20.42	44.42	--	50 U	**303**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _19990909	09/09/99	Qva	Permanent	22.43	42.41	--	50 U	**502**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _20000407	04/07/00	Qva	Permanent	19.39	45.45	--	50 U	**406**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
PS-MW8	PS-MW8 _20000906	09/06/00	Qva	Permanent	21.95	42.89	--	50 U	**337**	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
SH-GW1	SH-GW1_19980827	08/27/98	Qva	Temporary	n/a	n/a	--	--	--	--	1.00 U	1.00 U	1.00 U	3.00 U	1.00 U	1.00 U	*1.00 U*	1.00 U	--	1.00 U	ND	1.00 U	--	--	--	--	--	--
Supplemental Investigations Under the 1997 Agreed Order																												
BL-MW3	BL-MW3-130911	09/11/13	Qvi	Permanent	12.55	54.21	--	100 U	260 U	420 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	0.10 U	0.00755 U	3.0 U	**8.6**	--	**7.4**	--
BL-MW4	BL-MW4-130708	07/08/13	Qvi/Qva	Permanent	13.32	34.48	--	100 U	280 U	460 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.3 U	--	--	--	--	--	--
BL-MW6	BL-MW6-130711	07/11/13	Qvi/Qva	Permanent	20.26	46.85	--	100 U	260 U	410 U	2.0 U	10 U	2.0 U	4.0 U	2.0 U	2.0 U	*2.0 U*	2.8 U	2.8 U	2.0 U	DET	10 U	--	--	--	--	--	--
CR-MW12	CR-MW12-130708	07/08/13	Qvi/Qva	Permanent	11.69	35.85	--	100 U	260 U	410 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.3 U	--	--	--	--	--	--
PS-MW6	PS-MW6-130711	07/11/13	Qva	Permanent	19.16	47.04	--	100 U	**1,000**	420 U	0.40 U	2.0 U	0.40 U	0.80 U	0.40 U	0.40 U	*0.40 U*	0.56 U	0.56 U	**1.5**	DET	2.0 U	--	--	--	--	--	--
PS-MW7	PS-MW7-130715	07/15/13	Qva	Permanent	13.84	52.19	--	100 U	**1,200**	430 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.5 U	1.4 U	**1.3**	DET	6.5 U	--	--	--	--	--	--
PS-MW7	DUPE-130715-GW-1	07/15/13	Qva	Permanent	n/a	n/a	--	100 U	**1,400**	420 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.5 U	1.4 U	**1.2**	DET	6.5 U	--	--	--	--	--	--
PS-MW8	PS-MW8-130711	07/11/13	Qva	Permanent	19.70	45.14	--	100 U	270 U	430 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.28 U	0.28 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
2016 Agreed Order Investigation																												
A11-MW26S	A11-MW26S-190912	09/12/19	Qvi/Qva	Permanent	23.66	42.07	--	**300 J**	**690 J**	470 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	**0.32**	DET	1.0 U	--	--	--	--	--	--
A11-MW26S	A11-MW26S-200318	03/18/20	Qvi/Qva	Permanent	20.03	45.70	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
A11-MW26S	A11-MW26S-200901	09/01/20	Qvi/Qva	Permanent	23.16	42.57	--	**250 J**	**640 J**	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	**0.54**	DET	**1.2**	--	--	--	--	--	--
BL-MW3	BL-MW3-161222	12/22/16	Qvi	Permanent	12.23	54.53	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
BL-MW3	DUP-161222	12/22/16	Qvi	Permanent	n/a	n/a	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
BL-MW3	BL-MW3-20190313	03/13/19	Qvi	Permanent	12.44	54.65	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
BL-MW3	BL-MW3-20190904	09/04/19	Qvi	Permanent	13.15	53.94	--	100 U	270 U	430 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
BL-MW3	BL-MW3-200313	03/13/20	Qvi	Permanent	12.41	54.68	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
BL-MW3	BL-MW3-200902	09/02/20	Qvi	Permanent	13.37	53.72	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
BL-MW4	BL-MW4-161215	12/15/16	Qvi/Qva	Permanent	10.36	37.44	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
BL-MW4	BL-MW4-20190312	03/12/19	Qvi/Qva	Permanent	11.89	35.91	--	100 U	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
BL-MW4	BL-MW4-190906	09/06/19	Qvi/Qva	Permanent	13.31	34.49	--	100 U	270 U	440 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
BL-MW4	BL-MW4-200323	03/23/20	Qvi/Qva	Permanent	11.79	36.01	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	0.048 U
BL-MW4	BL-MW4-200901	09/01/20	Qvi/Qva	Permanent	13.20	34.60	--	100 U	220 U	220 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
BL-MW6	BL-MW6-161222	12/22/16	Qvi/Qva	Permanent	19.85	47.26	--	--	--	--	--	--	--	--	--	--	*4.0 U*	4.0 U	--	--	DET	--	--	--	--	--	--	--
BL-MW6	BL-MW6-20190313	03/13/19	Qvi/Qva	Permanent	20.26	46.83	--	--	--	--	--	--	--	--	--	--	*4.0 U*	4.0 U	--	--	DET	--	--	--	--	--	--	--
BL-MW6	BL-MW6-20190904	09/04/19	Qvi/Qva	Permanent	20.43	46.66	--	100 U	270 U	430 U	4.0 U	20 U	4.0 U	8.0 U	4.0 U	4.0 U	*4.0 U*	4.0 U	4.0 U	4.0 U	DET	20 U	--	--	--	--	--	--	--
BL-MW6	BL-MW6-200313	03/13/20	Qvi/Qva	Permanent	20.19	46.90	--	100 U	200 U	200 U	4.0 U	20 U	4.0 U	8.0 U	4.0 U	4.0 U	*4.0 U*	4.0 U	4.0 U	4.0 U	DET	20 U	--	--	--	--	--	--	--
BL-MW6	BL-MW6-200902	09/02/20	Qvi/Qva	Permanent	20.48	46.61	--	100 U	210 U	210 U	2.0 U	10 U	2.0 U	4.0 U	2.0 U	2.0 U	*2.0 U*	2.0 U	2.0 U	2.0 U	DET	10 U	--	--	--	--	--	--	--
CR-MW12	CR-MW12-161215	12/15/16	Qvi/Qva	Permanent	10.97	36.57	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
CR-MW12	CR-MW12-20190313	03/13/19	Qvi/Qva	Permanent	10.85	36.69	--	--	--	--	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
CR-MW12	CR-MW12-190906	09/06/19	Qvi/Qva	Permanent	11.54	36.00	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--	--
CR-MW12	CR-MW12-200319	03/19/20	Qvi/Qva	Permanent	10.93	36.61	--	--	--	--	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--	--
CR-MW12	CR-MW12-200901	09/01/20	Qvi/Qva	Permanent	11.79	35.75	--	--	--	--	0.40 U	2.0 U	0.40 U	0.80 U	0.40 U	0.40 U	*0.40 U*	0.40 U	0.40 U	0.40 U	DET	2.0 U	--	--	--	--	--	--	--
CR-MW12	CR-MW12-200902	09/02/20	Qvi/Qva	Permanent	11.79	35.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PS-MW6	PS-MW6-161221	12/21/16	Qva	Permanent	16.46	49.74	--	--	**5,300**	*650 U*	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
PS-MW6	PS-MW6-20190313	03/13/19	Qva	Permanent	18.47	47.73	--	--	**2,300**	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
PS-MW6	PS-MW6-190911	09/11/19	Qva	Permanent	20.64	45.56	--	100 U	**830**	440 U	1.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U	1.0 U	DET	5.0 U	--	--	--	--	--	--	--
PS-MW6	PS-MW6-200318	03/18/20	Qva	Permanent	17.96	48.24	--	550 U	**1,500**	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	**1.3**	DET	1.0 U	--	--	--	--	--	--	--
PS-MW6	PS-MW6-200902	09/02/20	Qva	Permanent	20.32	45.88	--	**210 J**	**2,200**	240 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	**0.28**	DET	1.0 U	--	--	--	--	--	--	--
PS-MW7	PS-MW7-161221	12/21/16	Qva	Permanent	13.03	53.00	--	--	**21,000**	*1,600 U*	--	--	--	--	--	--	*0.40 U*	0.40 U	--	--	DET	--	--	--	--	--	--	--
PS-MW7	PS-MW7-20190312	03/12/19	Qva	Permanent	13.57	52.46	--	--	**11,000**	*800 U*	--	--	--	--	--	--	*0.40 U*	0.40 U	--	--	DET	--	--	--	--	--	--	--
PS-MW7	PS-MW7-190909	09/09/19	Qva	Permanent	14.22	51.81	--	**900 J**	**7,900,000 J**	**310,000 J**	**0.42**	1.0 U	0.20 U	**0.30**	**0.30**	0.20 U	*0.20 U*	0.20 U	0.20 U	**3.1**	DET	1.0 U	--	--	--	--	--	--
PS-MW7	PS-MW7-200320	03/20/20	Qva	Permanent	13.46	52.57	--	**210**	**620**	210 U	0.50 U	2.5 U	0.50 U	1.0 U	0.50 U	0.50 U	*0.50 U*	0.50 U	0.50 U	**0.79**	DET	2.5 U	--	--	--	--	--	--
PS-MW7	PS-MW7-200902	09/02/20	Qva	Permanent	14.19	51.84	--	**370 J**	**1,200**	210 U	**0.27**	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	**2.0**	DET	**1.9**	--	--	--	--	--	--
PS-MW8	PS-MW8-161221	12/21/16	Qva	Permanent	16.95	47.89	--	--	260 U	**450**	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
PS-MW8	PS-MW8-20190313	03/13/19	Qva	Permanent	19.37	45.47	--	--	260 U	410 U	--	--	--	--	--	--	*0.20 U*	0.20 U	--	--	DET	--	--	--	--	--	--	--
PS-MW8	PS-MW8-190912	09/12/19	Qva	Permanent	22.08	42.76	--	100 U	280 U	450 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
PS-MW8	PS-MW8-200320	03/20/20	Qva	Permanent	18.76	46.08	--	100 U	210 U	210 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
PS-MW8	PS-MW8-200902	09/02/20	Qva	Permanent	21.85	42.99	--	100 U	200 U	200 U	0.20 U	1.0 U	0.20 U	0.40 U	0.20 U	0.20 U	*0.20 U*	0.20 U	0.20 U	0.20 U	DET	1.0 U	--	--	--	--	--	--
Phase IIB Utility Capital Project																												
BL-MW7	BL-MW7_20020211	02/11/02	Qva	Permanent	n/a	n/a	--	50 U	250 U	500 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	--	--	--	1.00 U	DET	1.00 U	--	--	--	--	--	--
Cherry Parkes Capital Project																												
CP-B4A	CP-B4A_20020404	04/04/02	Qvi	Temporary	n/a	n/a	--	50 U	250 U	500 U	0.200 U	**0.301**	0.200 U	0.750 U	0.200 U	0.500 U	*0.200 U*	0.200 U	--	0.500 U	ND	0.500 U	--	--	--	--	--	--

Notes:

[1] Sample locations are shown on Figures 12-4 through 12-6. Location identification nomenclature was added to select wells as necessary (for example CP- was added to CP-B4A). TW# was added to the end of select temporary wells where groundwater samples were collected at two depth intervals in the same location.

[2] Chemical analytical results in this table include contaminants of concern (COCs) based on historical land use, potential source(s), and/or required analysis in accordance with Model Toxics Control Act Table 830-1 in which COCs were detected at a concentration greater than their respective PCUL. The full list of chemical analytical result list is presented in Appendices D and H. Chemical analytical results associated with other Areas of Concern are presented in other sections of the Remedial Investigation.

[3] Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 1,000 µg/L.

[4] Sum of m-,p- and o- xylenes. The highest reporting limit for non-detect results is listed.

[5] Naphthalene may have been analyzed as a volatile organic compound (VOC), polycyclic aromatic hydrocarbon (PAH), and/or semi-volatile organic compound (SVOC). The lowest practical quantitation limit (PQL) or the greatest detected concentration is shown.

[6] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency concentration (TEQ) methodology in Washington Administrative Code 173-340-708(8). Non-detections were assigned half the reporting limit for these calculations

[7] Total polychlorinated biphenyl (PCB) Aroclors is the sum of PCB Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260. The highest reporting limit for non-detect results is listed.

[8] Groundwater PCUL is based on the lowest value for protection of groundwater as drinking water, adjusted for PQL (see Table 3-3).

[9] Groundwater screening level referenced from Ecology's CLARC (Cleanup Levels and Risk Calculation) Table (Excel) dated January 2023 and Ecology's Vapor Intrusion Guidance (Publication No. 09-09-047; see Table 3-5 and 3-6).

-- = not tested

µg/L = microgram per liter

1,2,4-TMB = 1,2,4-trimethylbenzene

1,3,5-TMB = 1,3,5-trimethylbenzene

BTEX = benzene, toluene, ethylbenzene and xylenes

CVOCs = chlorinated volatile organic compounds

DET = detected

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

G, D, O = gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons and oil-range petroleum hydrocarbons

J = estimated value by laboratory

MTBE = methyl tert-butyl ether

n/a = not available

Qva = Vashon advance outwash

Qvi = Vashon ice-contact deposits

TOC = top of casing

TPH-G, -D, -O = total petroleum hydrocarbons -gasoline, -diesel, -oil

TPH-HCID = Total Petroleum Hydrocarbons - Hydrocarbon Identification

U = analyte was ND at or greater than the listed reporting limit.

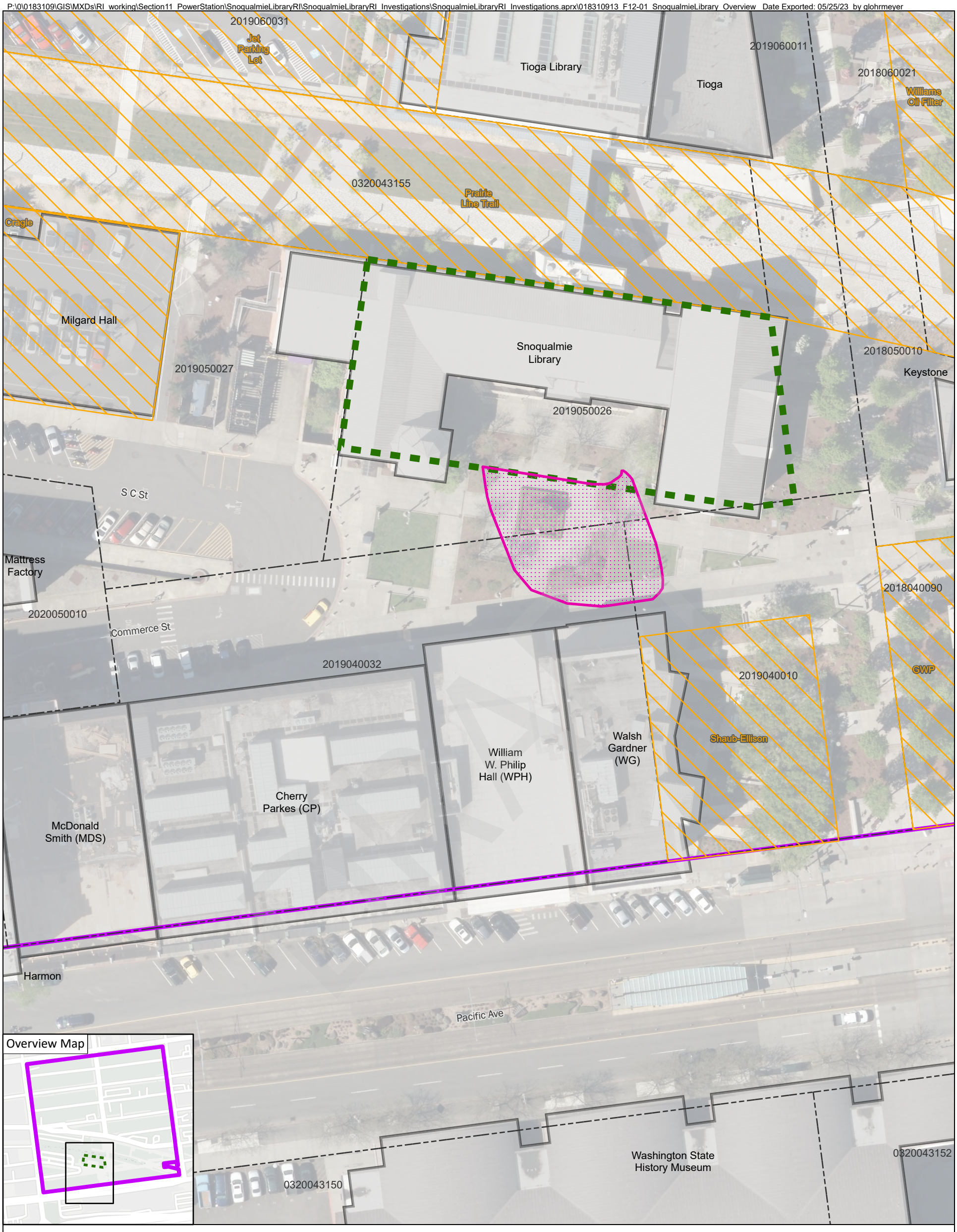
Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.

Italic font type indicates the non-detect result is greater than the PCUL.

Shading indicates that the detected concentration is greater than the PCUL.

Shading indicates that the detected concentration is greater than the screening level for vapor intrusion and/or the PCUL.

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-01_SnoqualmieLibrary_Overview Date Exported: 05/25/23 by glohrmeyer



Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Snoqualmie Library Site - Area of Soil and/or Groundwater with One or More Contaminants of Concern Exceeding the Proposed Cleanup Level (PCUL)
- Other Identified Property-Specific Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint

50 0 50
Feet

Notes:

AOC = Area of Concern
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.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

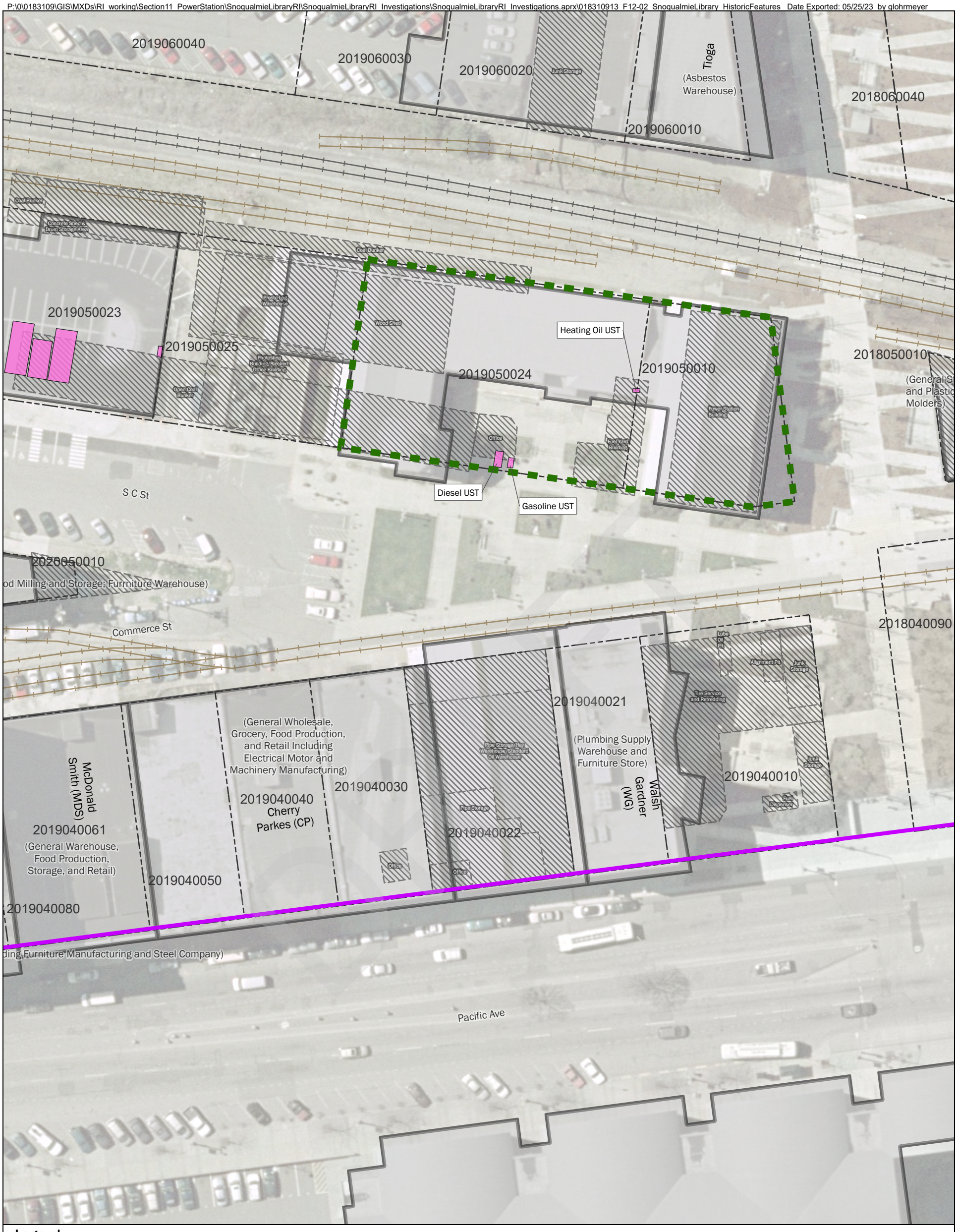
Overview
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-1

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-02_SnoqualmieLibrary_HistoricFeatures Date Exported: 05/25/23 by glohrmeyer



Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Parcel Boundary and Number (Historic)
- Historic Building Footprint/Feature
- Existing Building Footprint (with Former Operations)
- Former Historic Rail Line
- Existing Historic Rail Line
- Former UST Locations

W N S E

50 0 50

Feet

Historic Features and Land Use
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-2

Notes:

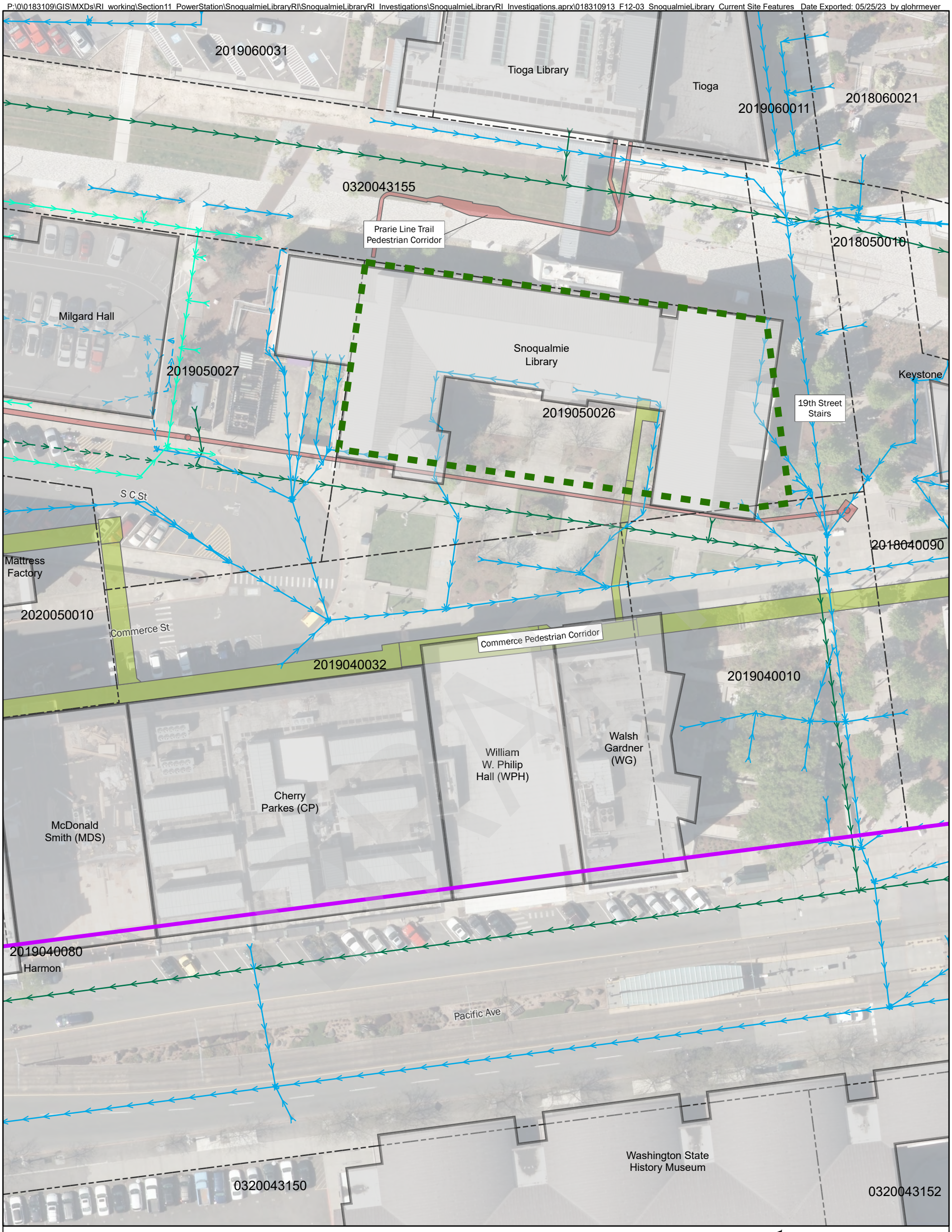
UST = underground storage tank

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.

Data Source: Aerial Imagery provided by Tacoma, 2002

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-03_SnoqualmieLibrary_Current Site Features Date Exported: 05/25/23 by glohrmeyer



Legend

- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Parcel Boundary and Number
- Existing Building Footprint
- Underground Electrical Duct
- Utilidor Footprint
- Abandoned Sanitary Sewer Utility
- Active Sanitary Sewer Utility
- Abandoned Stormwater Utility
- Active Stormwater Utility
- New Stormwater Utility Installed After 2021

50 0 50

Feet

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Current Features and Utility Infrastructure
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-3

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-04_SnoqualmieLibrary_PreviousInvestigations Date Exported: 06/02/23 by glohrmeyer

Legend

- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring with Grab Groundwater Sample in Qva Aquifer
- Boring with Grab Groundwater Sample in Unconfirmed Aquifer
- Boring
- Boring with No Analysis
- Test Pit
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Shoring Wall
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Locations

25 0 25
Feet

Notes:

UST = underground storage tank

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2002
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

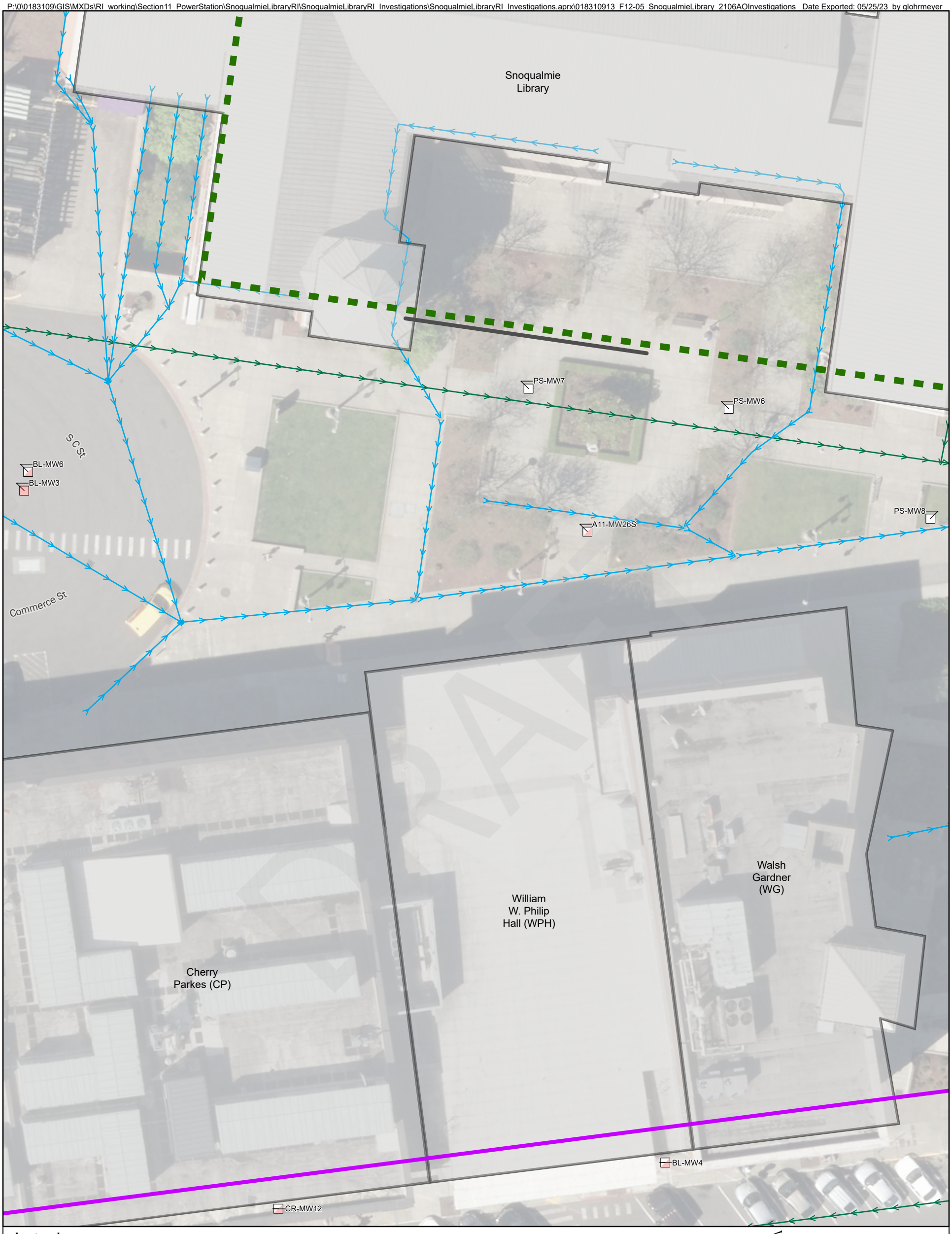
Previous Investigations and Remedial Actions Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-4

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-05_SnoqualmieLibrary_2106AOInvestigations Date Exported: 05/25/23 by glohrmeyer



Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Shoring Wall
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint

W S N E

25 0 25

Feet

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

2016 Agreed Order Remedial Investigation Locations
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-5

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-06_SnoqualmieLibrary_CapitalProjects Date Exported: 05/25/23 by glohrmeyer

Legend

- Qva Aquifer Monitoring Well - Decommissioned
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring
- Boring with No Analysis
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Shoring Wall
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Stormwater Basin
- Underground Electrical Duct
- Utilidor Footprint

25 0 25
Feet

Notes:

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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Capital Project Investigations and Remedial Actions
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-6

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-07_N&E_SnoqualmieLibrary_TPH-G_Soil Date Exported: 05/26/23 by glohrmeyer

Legend

- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring with Grab Groundwater Sample in Qva Aquifer
- Boring with Grab Groundwater Sample in Unconfirmed Aquifer
- Boring
- Boring with No Analysis
- Test Pit
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Shoring Wall
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Location
- Underground Electrical Duct
- Utilidor Footprint

25 0 25
Feet

Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 30 milligram per kilogram (mg/kg) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-G in Soil
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-7

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-08_N&E_SnoqualmieLibrary_TPH-D_Soil Date Exported: 05/25/23 by glohrmeyer

Soil Result Summary

ER: >100

ER: 10-100

ER: 1-10

ER: ≤1

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Snoqualmie Library

PS-MW4 PS-MW2 PS-TP4 PS-S15 PS-SS-3 PS-SS-4 PS-S12 PS-S14 PS-MW3 PS-S13 PS-TP3 PS-S9 PS-S10 PS-S5 PS-SS-5 PS-S3 PS-SS-6 PS-S1 PS-S4 PS-S8 PS-S7 PS-S2 PS-S6 PS-GW2 PS-MW7 PS-MW5 PS-MW6 PS-MW8

S C St

AL-AL'

BL-MW6

A11-MW26S DMB-17 DMB-18 DMB-19 DMB-20 DMB-21

Commerce St

SH-MW4 SH-S2 SH-S1

AH-B06 WPH-S2 W. WPH-S3 S. WPH-S1 N. WPH-S4 E.

CP-B3

AH-B05

AH-B03

William W. Philip Hall (WPH)

Walsh Gardner (WG)

CP-B4A

Cherry Parkes (CP)

CP-B4B AH-B01 SH-MW3 AH-B02

Legend

- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring with Grab Groundwater Sample in Qva Aquifer
- Boring with Grab Groundwater Sample in Unconfirmed Aquifer
- Test Pit
- Boring
- Boring with No Analysis
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Shoring Wall
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Location

W S N E

25 0 25

Feet

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 250 milligram per kilogram (mg/kg) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-D in Soil
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-8

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-09_N&E_SnoqualmieLibrary_BTEX_Soil Date Exported: 05/25/23 by glohrmeyer

Soil Result Summary

ER: >100

ER: 10-100

ER: 1-10

ER: ≤1

Result shown is the maximum detected concentration throughout the soil column divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Snoqualmie Library

Snoqualmie Library (AOC)

William W. Philip Hall (WPH)

Walsh Gardner (WG)

Cherry Parkes (CP)

Commerce St

S C St

AL-AL'

PS-MW4 PS-MW2 PS-MW3 PS-MW7 PS-MW5 PS-MW6 PS-MW8

PS-TP4 PS-TP3

PS-S15 PS-S12 PS-S14 PS-S13 PS-S9 PS-S10 PS-S8 PS-S7 PS-S5 PS-S3 PS-S1 PS-S4 PS-S2 PS-S6

PS-SS-3 PS-SS-4 PS-SS-5 PS-SS-6

PS-GW2

BL-MW6

A11-MW26S

DMB-17 DMB-18 DMB-19 DMB-20 DMB-21

SH-MW4 SH-S2 SH-S1

AH-B06 AH-B05 AH-B03 AH-B01 AH-B02

WPH-S2 W. WPH-S1 N. WPH-S3 S. WPH-S4 E.

CP-B3 CP-B4A CP-B4B

Legend

- Qva Aquifer Monitoring Well
- Qva Aquifer Monitoring Well - Decommissioned
- Qvi/Qva Aquifer Monitoring Well
- Boring with Grab Groundwater Sample in Qvi Aquifer
- Boring with Grab Groundwater Sample in Qva Aquifer
- Boring with Grab Groundwater Sample in Unconfirmed Aquifer
- Test Pit
- Boring
- Boring with No Analysis
- Confirmation Sample
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Shoring Wall
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Location

W S N E

25 0 25

Feet

Notes:

BTEX= Benzene, Ethylbenzene, Toluene and Total Xylenes, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = Benzene(0.0017 mg/kg), Ethylbenzene(0.34 mg/kg), Toluene(0.27 mg/kg), Total Xylenes(0.83 mg/kg)
milligram per kilogram (mg/kg) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of BTEX in Soil
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-9

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-10_N&E_SnoqualmieLibrary_TPH-G_GW Date Exported: 05/26/23 by glohrmeyer

Groundwater Result Summary

ER: >100
ER: 10-100
ER: 1-10
ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Snoqualmie Library

TPH-G Detected Greater than PCUL During One Sampling Event and Laboratory Stated Detected Concentration was Due to Overlap from the TPH-D Range

PS-MW7
PS-MW6
PS-MW8
A11-MW26S
BL-MW6
BL-MW3
BL-MW4
CR-MW12

S C St
Commerce St
AL-AL'

Walsh Gardner (WG)
William W. Philip Hall (WPH)
Cherry Parkes (CP)

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Qvi Aquifer Groundwater Flow Direction
- Qva Aquifer Groundwater Flow Direction
- Shoring Wall
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Location

W S E N

25 0 25
Feet

Notes:

TPH-G = Gasoline-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 800 micrograms per liter (µg/L) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

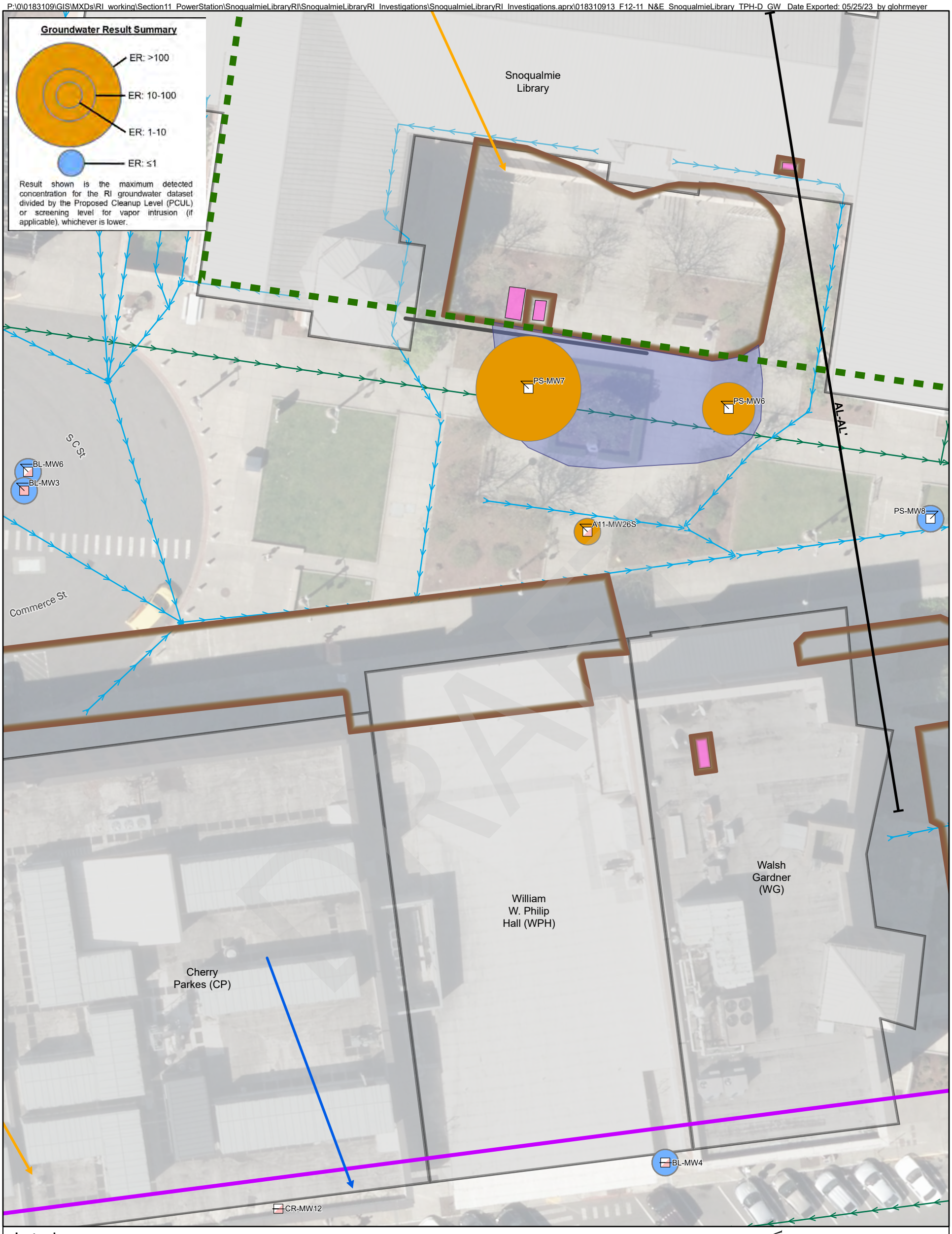
Summary of TPH-G in the Qvi/Qva Aquifer
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-10

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-11_N&E_SnoqualmieLibrary_TPH-D_GW Date Exported: 05/25/23 by glohrmeyer



Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Qvi Aquifer Groundwater Flow Direction
- Qva Aquifer Groundwater Flow Direction
- Shoring Wall
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Location
- Estimated Extent of Light Non-Aqueous Phase Liquid (LNAPL)

25 0 25
Feet

Notes:

TPH-D = Diesel-range petroleum hydrocarbons, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = 500 micrograms per liter (µg/L) – See Section Tables
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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.

Data Source: Aerial Imagery provided by Tacoma, 2015

Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of TPH-D in the Qvi/Qva Aquifer
Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-11

P:\0\0183109\GIS\MXDs\RI_working\Section11_PowerStation\SnoqualmieLibraryRI\SnoqualmieLibraryRI_Investigations\SnoqualmieLibraryRI_Investigations.aprx\018310913_F12-12_N&E_SnoqualmieLibrary_TPH-BTEX_GW Date Exported: 05/25/23 by glohrmeyer

Groundwater Result Summary

ER: >100
ER: 10-100
ER: 1-10
ER: ≤1

Result shown is the maximum detected concentration for the RI groundwater dataset divided by the Proposed Cleanup Level (PCUL) or screening level for vapor intrusion (if applicable), whichever is lower.

Snoqualmie Library
PS-MW7
PS-MW6
PS-MW8
A11-MW26S
BL-MW6
BL-MW3
BL-MW4
CR-MW12
AL-AL'
S C St
Commerce St
Cherry Parkes (CP)
William W. Philip Hall (WPH)
Walsh Gardner (WG)

Legend

- Qva Aquifer Monitoring Well
- Qvi Aquifer Monitoring Well
- Qvi/Qva Aquifer Monitoring Well
- Active Sanitary Sewer Utility
- Active Stormwater Utility
- Qvi Aquifer Groundwater Flow Direction
- Qva Aquifer Groundwater Flow Direction
- Shoring Wall
- Cross Section
- University of Washington - Tacoma Campus Master Plan Boundary
- Snoqualmie Library Area of Concern
- Existing Building Footprint
- Approximate Lateral Extent of Remedial Excavation
- Former UST Location

25 0 25
Feet

Notes:

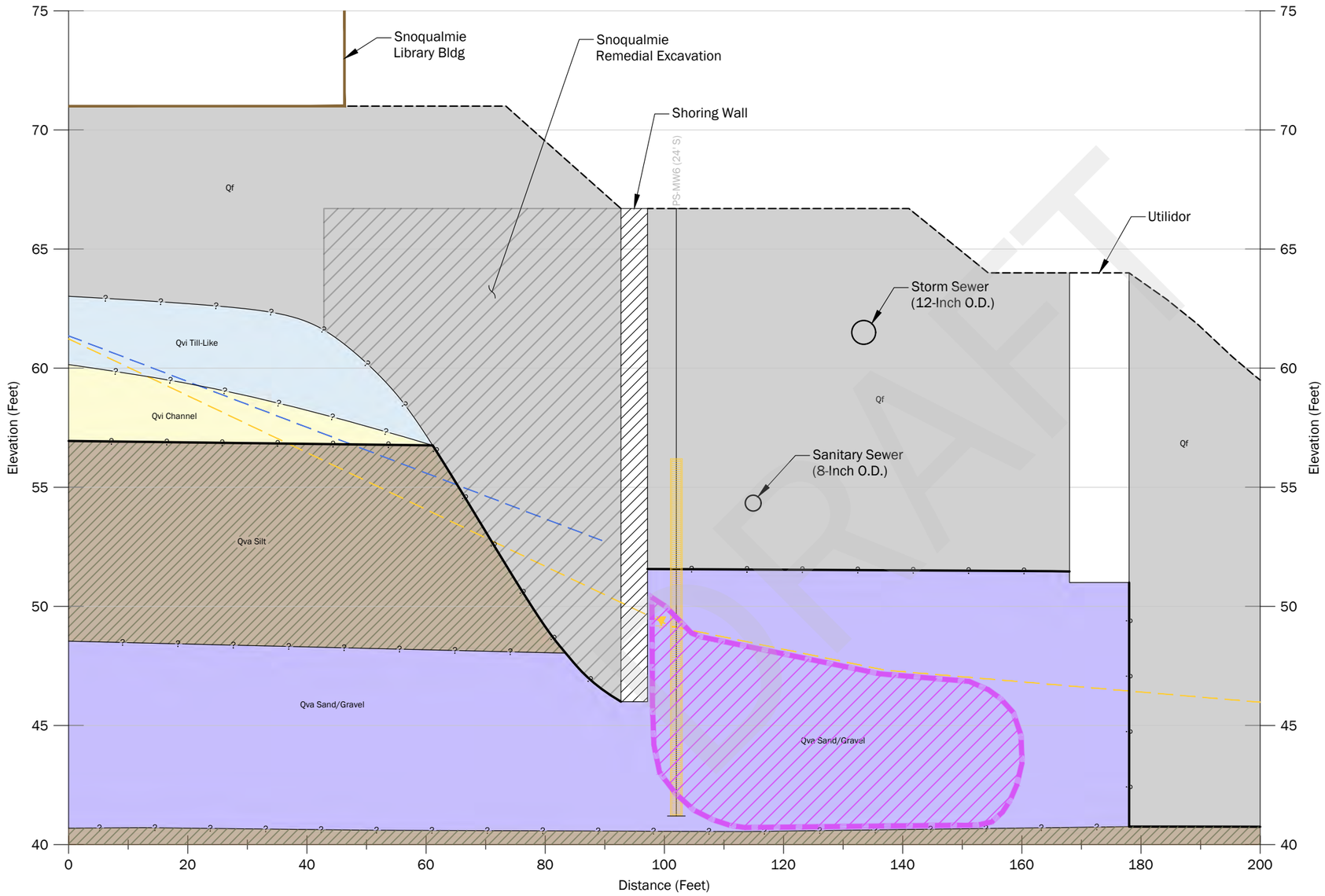
BTEX= Benzene, Ethylbenzene, Toluene and Total Xylenes, ER = Exceedance Ratio, UST = underground storage tank
Basis for Screening = Benzene(5 (µg/L), Ethylbenzene(700 (µg/L), Toluene(640 (µg/L), Total Xylenes(1600 (µg/L)
micrograms per liter (µg/L) – See Section Tables
1. The locations of all features 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. New sanitary sewer and stormwater utilities based on proposed design layout provided by the City of Tacoma and UWT and installed in 2021. As-builts are pending.
Data Source: Aerial Imagery provided by Tacoma, 2015
Projection: NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet

Summary of BTEX in Groundwater the Qvi/Qva Aquifer Snoqualmie Library

University of Washington – Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-12



Legend

- UG-MW31 (Offset 91' N) — Borehole Number (Offset Distance and Direction)
- Qvi Aquifer Water Level
- Qva Aquifer Water Level
- Qvi Aquifer Well Screen
- Qva Aquifer Well Screen
- Inferred Soil Contact Line
- Contact Between Qvi and Qva Units
- Existing Ground Surface
- Existing Building Location
- Qvi Aquifer Groundwater Surface (April 2021)
- Qva Aquifer Potentiometric Groundwater Surface (April 2021)
- Approximate Extent of Petroleum-Related Contaminated Soil and Groundwater

Stratigraphic Units

Recent Deposits (Qf)
- Fill (Qf)

Ice-Contact Deposits (Qvi)
- Silty Gravel with Sand (Qvi Till-Like Deposits)
- Oxidized Sand and Gravel (Qvi Channel Deposits)

Advance Outwash Deposits (Qva)
- Silt to Sandy Silt (Qva Silt Deposits)
- Sand and Gravel (Qva Sand and Gravel Deposits)

Notes

1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
2. O.D. = Outer Diameter

Datum: NGVD29

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

20 0 20
Horizontal Scale in Feet

5 0 5
Vertical Scale in Feet
Vertical Exaggeration: 4X

Summary of Petroleum-Related Contamination in Soil and Groundwater Cross Section AL-AL'

University of Washington - Tacoma Campus
Tacoma, Washington

GeoEngineers

Figure 12-13