Tena Seeds
Case Manager
Washington State Department of Ecology
PO Box 330316
Shoreline, WA 98133-9716

Arcadis U.S., Inc.
805 SW Broadway, Suite 700
Portland, OR 97205
United States
Phone: 503 220 8201
www.arcadis.com

Date: February 4, 2025
Subject: 2025 Groundwater Monitoring
Block 37 Site
600-630 Westlake Avenue North
Seattle, Washington
Agreed Order NO: DE 19430

Dear Ms. Seeds:

On behalf of Phillips 66 Company and City Investors XI L.L.C., Arcadis U.S., Inc. (Arcadis) has prepared this memorandum to describe planned groundwater monitoring activities for 2025 at the Block 37 Site (Site) in accordance with Agreed Order DE 19430. The Site is generally located at 600 through 630 Westlake Avenue North in Seattle, Washington (the Property) and consists of the Property and portions of the multiple adjacent rights-of-way (ROWs).

Purpose

Based on knowledge of the current conceptual site model and prior sampling activities, additional groundwater monitoring activities will provide additional data for the remedial investigation (RI) and feasibility study (FS) for the Site. Additional monitoring is necessary to better understand groundwater flow direction and gradient given historical changes based on local dewatering and the installation of the slurry walls on the northern, northeastern, and the southern portions and the sheet pile wall on the western portion of the Property. Recent groundwater investigations have not gauged a sufficient number of the active Site monitoring wells to provide a clear picture as to the current groundwater flow patterns and how they vary seasonally.

Additional sampling of active Site monitoring wells will also provide up to four quarters of analytical data for all Site wells, given that the most recently installed wells were only sampled for two quarters previously. It will also provide additional information about groundwater quality related to contaminants of potential concern and components of the undocumented fill that is beneath the Site due to historical operations on the Site.

Scope of Work

Four quarterly monitoring events are proposed to assess the groundwater conditions over an annual cycle at the Site. The groundwater sampling methods and procedures will be consistent with those used during the RI as presented in the Sampling and Analysis Plan which is included as Appendix D of the Final RI Work Plan (Atlas Technical Consultants, Inc 2023) approved by the Washington State Department of Ecology (Ecology). Synoptic groundwater level measurements will be performed prior to each groundwater sampling event.

Groundwater quality parameters pH, temperature, specific conductance, dissolved oxygen, oxidation-reduction potential, and turbidity will be measured and recorded using a water quality meter during low-flow groundwater sampling, and once the parameters have equilibrated, a groundwater sample will be collected. Decontamination water and purge water will be containerized in United States Department of Transportation approved 55-gallon drums, characterized, and disposed of at an appropriate facility.

During the first quarter monitoring event, due to insufficient time to acquire the required ROW permits, monitoring wells AMW-8, MW-216, MW-217, and MW-218 in the Mercer Street ROW will not be gauged or sampled (Figure 1). A total of 38 wells will be sampled during this event, and 45 wells will be gauged. During each subsequent quarterly event, pending ROW permit approval, a total of 42 groundwater samples will be collected and 49 wells will be gauged. Prior to each monitoring event, Ecology will be notified at least seven days in advance. The sampling locations and parameters to be analyzed are identified in Table 1.

Groundwater samples will be analyzed for:

- Gasoline range organics (GRO) using Northwest Method NWTPH-gasoline extended (Gx)
- Diesel range organics (DRO) and heavy oil range organics (ORO) using Northwest Method NWTPH-diesel extended (Dx) with and without silica gel cleanup (SGC)
- Benzene, toluene, ethylbenzene, xylenes, (BTEX) and naphthalene by U.S. Environmental Protection Agency (EPA) Method 8260D
- Total and dissolved lead and total and dissolved arsenic by EPA Method 6010D

Samples will be analyzed for DRO and ORO with and without SGC to identify what portion of detected DRO and ORO is due to polar metabolites, weathering, or other sources of biogenic interference from organic matter, in accordance with Ecology's *Guidance for Silica Gel Cleanup in Washington State* (Ecology 2023).

Select locations will also be analyzed for the following geochemical indicator analytes, as shown in Table 1:

- Nitrate and sulfate by EPA Methods 300.0 or 9056A
- Ferrous Iron Soluble by Standard Method 3500
- Manganese Soluble by EPA Method 6010D
- Methane by Method RSK 175
- Alkalinity by Standard Method 2320B
- Total Organic Carbon (TOC) by SW-846 Method 9060A or 5310B

The geochemical indicator results will facilitate the evaluation of the applicable cleanup alternatives during the FS, and will be reported as part of the FS.

For quality control and quality assurance, four duplicate samples will be collected from pre-determined locations during each sampling event, and a triplicate blank will be submitted for analysis to determine any background sources during sampling.

Groundwater samples will be collected in laboratory-provided sample containers and submitted under standard chain-of-custody procedures for analysis to Pace Analytical National Center, located in Mt. Juliet, Tennessee.

Deliverables

The first and second quarters of monitoring will be reported as part of the RI. Based on the timeline of the RI, first quarter results are expected to be incorporated in the Agency Review Draft RI Report, and second quarter results will be implemented in the subsequent version of the RI Report. The third and fourth quarter results will be reported as part of the FS, which will be due to Ecology 90 days following Ecology's approval to proceed with the FS.

We appreciate the opportunity to provide this memorandum and your continued cooperation on this project. Please let us know if you have any questions or need any additional information.

Sincerely,
Arcadis U.S., Inc.

Jeremy Wilson, PE
Project Manager

Email: Jeremy.Wilson@arcadis.com
Direct Line: 303.319.6195

CC: Eli Gurian, Phillips 66 Company
Corey Wilson, City Investors XI L.L.C.
Cliff Schmitt and Brani Jurista, Farallon Consulting, L.L.C.

Enclosures:
Table 1. 2025 Groundwater Monitoring Scope of Work
Figure 1. Site Plan with Monitoring Well Locations

References:
Atlas Technical Consultants, Inc. 2023. Final Remedial Investigation Work Plan. Block 37, 600 – 630 Westlake Avenue North, Seattle, Washington. August 23.
Washington State Department of Ecology. 2023. Guidance for Silica Gel Cleanup in Washington State. Publication No. 22-09-059. November.

Table

Table 1 2025 Groundwater Monitoring Scope of Work
Block 37 Site
600 N Westlake Avenue
Seattle, Washington

Well ID	WELL SAMPLING SCHEDULE												SAMPLING SCOPE			FIELD TESTS REQUIRED						LAB ANALYSES REQUIRED										QC
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Gauge OnlyLocation?	Purge Method	In Right-of-Way?	pH	Temperature	Conductivity	Dissolved Oxygen	Oxidation Reduction Potential	Turbidity	BTEX , Naphthalene (EPA 8260D)	GRO (NWTPH-Gx)	DRO/ORO (NWTPH-Dx)	DRO/ORO (NWTPH-Dx) W/ SGC	Total Metals ICP (Arsenic and Lead) (EPA 6010D)	Dissolved Arsenic and Lead	Total Organic Carbon	Sulfate, Nitrate, Ferrous Iron Soluble, Manganese Soluble	Methane	Alkalinity	Duplicate
AMW-2		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-3		X			X			X			X		No	LFP	Y (S Valley)	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-4		X			X			X			X		No	LFP	Y (S Valley)	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-5		X			X			X			X		No	LFP	Y (E Westlake)	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	
AMW-6		X			X			X			X		No	LFP	Y	X	X	X	X	X	X	X	X	X	X	X	X					
AMW-7		X			X			X			X		Y	NA	N																
AMW-8					X			X			X		No	LFP	Y (Mercer median)	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-9		X			X			X			X		No	LFP	Y (E Westlake)	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-10		X			X			X			X		No	LFP	Y (E Westlake)	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-11		X			X			X			X		No	LFP	Y (E Westlake)	X	X	X	X	X	X	X	X	X	X	X	X				
AMW-12		X			X			X			X		No	LFP	Y (S Mercer)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
AMW-13		X			X			X			X		No	LFP	Y (S Mercer)	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X
AMW-14		X			X			X			X		No	LFP	Y (S Mercer)	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	
AMW-15		X			X			X			X		No	LFP	Y (S Mercer)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
AMW-16		X			X			X			X		No	LFP	Y (S Valley)	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	
AMW-18		X			X			X			X		No	LFP	Y (E Westlake)	X	X	X	X	X	X	X	X	X	X	X	X					
PH-1		X			X			X			X		Y	NA	N																
PH-2/AMW-1		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
PH-3		X			X			X			X		Y	NA	N																
B-37-1 (GEI-1)		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X	X				
B-37-2 (GEI-2)		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					X
B-37-3		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
B-37-4		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
B-37-5		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
B-37-6		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
B-37-7		X			X			X			X		Y	NA	N																
B-37-8		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
B-37-9		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
MW-45		X			X			X			X		Y	NA	N																
MW-50		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X	X				X
MW-54		X			X			X			X		Y	NA	N																
MW-209		X			X			X			X		No	LFP	Y (N of railcar)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-210		X			X			X			X		No	LFP	Y (N of railcar)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-211		X			X			X			X		No	LFP	Y (N of railcar)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-212		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
MW-213		X			X			X			X		No	LFP	Y (S Valley)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-214		X			X			X			X		No	LFP	Y (S Valley)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-215		X			X			X			X		No	LFP	Y (S Valley)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-216					X			X			X		No	LFP	Y (Mercer median)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-217					X			X			X		No	LFP	Y (Mercer median)	X	X	X	X	X	X	X	X	X	X	X	X					
MW-218					X			X			X		No	LFP	Y (Mercer median)	X	X	X	X	X	X	X	X	X	X	X	X					
MWR-1		X			X			X			X		Y	NA	N																
MWR-3		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
MWR-4		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
MWR-5		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					X
MWR-6		X			X			X			X		Y	NA	N	X	X	X	X	X	X	X	X	X	X	X	X					
SMW-3		X			X			X			X		No	LFP	Y (N of railcar)	X	X	X	X	X	X	X	X	X	X	X	X					
FMW-131		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					
FMW-139		X			X			X			X		No	LFP	N	X	X	X	X	X	X	X	X	X	X	X	X					

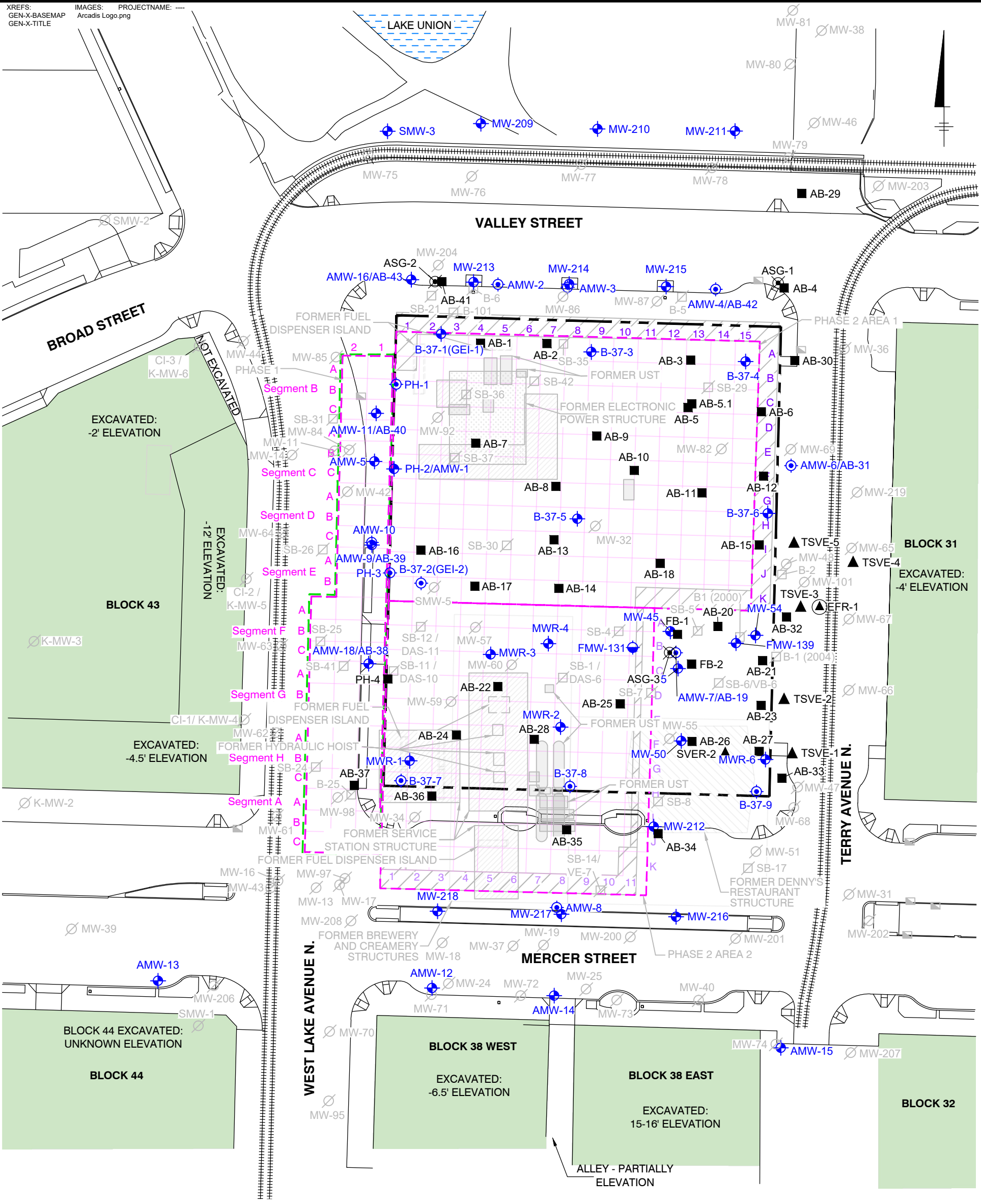
Notes

E = east
LFP = Low-flow purge
BTEX = benzene, toluene, ethylbenzene, and total xylenes
DRO = diesel range organics
EPA = Environmental Protection Agency
GRO = gasoline range organics
H = Analysis to be Submitted on Hold
N = north
NA = Not Applicable
ORO = oil range organics
QC = quality control
SGC = silica gel cleanup
S = south
Y = Yes

Figure

C:\Users\iamiceli\DC\ACCDocs\Arcadis ACC US\AUS-99999999-P66_630 WESTLAKE AVENUE_NORTH SEATTLE_WA\Project Files\10_WIP\10T_ARC_ENV\2025\01-DWG\GEN-F01-SITE PLAN-N.dwg LAYOUT: 1 SAVED: 1/28/2025 3:00 PM ACADVER: 24.2S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 1/29/2025 10:11 AM BY: IAMICELI, KIMBERLY

XREFS: IMAGES: PROJECTNAME: ----
GEN-X-BASEMAP Arcadis Logo.png
GEN-X-TITLE



LEGEND:

- BLOCK 37 PROPERTY BOUNDARY
- SHEET PILE WALL
- SLU STREET CAR LINE
- SLURRY (GRAVITY) WALL
- STORM SEWER MANHOLE / CATCH BASIN
- MWR-1 — SHALLOW WATER-BEARING ZONE MONITORING WELL
- B-37-8 — INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- FMW-131 — DEEP WATER-BEARING ZONE MONITORING WELL
- ASG-1 — ATLAS SOIL GAS WELL
- AB-36 — SOIL BORING
- SB-8 — ABANDONED BORING
- SVER-1/ TSVE-1 — SOIL VAPOR EXTRACTION WELL
- EFR-1 — ENHANCED FLUID RECOVERY WELL
- MW-70 — ABANDONED MONITORING WELL, OR AIR SPARGE
- PREVIOUS EXCAVATION EXTENTS (2005 THROUGH 2008)
- PREVIOUS EXCAVATION EXTENTS - 2005 THROUGH 2008

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.

0 60' 120'

GRAPHIC SCALE

BLOCK 37 SITE
600-630 WESTLAKE AVENUE NORTH
SEATTLE, WASHINGTON

SITE PLAN

ARCADIS

FIGURE 1