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DEPT OF ECOLOGY
TOP - NWRO

February 17, 2015

Washington State Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, Washington 98008-5452

Attention: Louise Bardy, Voluntary Cleanup Program

Subject: Conceptual Cleanup Action and Request for NFA-Likely Opinion Letter
Seattle Marriott AC
739 9th Avenue North
Seattle, Washington
GeoEngineers File No. 20776-003-00

INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) is pleased to submit an application to the Washington State Department of Ecology's (Ecology's) Voluntary Cleanup Program (VCP) for the proposed Marriott development project in the South Lake Union neighborhood at 739 9th Avenue North in Seattle, Washington on behalf of our client, White/Peterman Properties, Inc. Our client is considering purchasing the subject property to build a multi-level hotel.

GeoEngineers recently completed a Phase I Environmental Site Assessment (ESA) and a Phase II ESA on the subject property. The Phase II ESA can also be considered a Remedial Investigation (RI) because of its robust nature that evaluated all media of concern (soil, groundwater and vapor) at this site. The Phase II ESA nomenclature was used because GeoEngineers' site characterization services also served as property acquisition due diligence for White/Peterman Properties Inc. The results of GeoEngineers' studies are summarized in the following reports, which are included with this letter.

- Phase I Environmental Site Assessment, South Lake Union Marriott AC, 739 9th Avenue North, Seattle, Washington, WPPI Bellevue MFS, LLC, dated November 13, 2014.
- Phase II Environmental Site Assessment, South Lake Union Marriott AC, 739 9th Avenue North, Seattle, Washington, WPPI Bellevue MFS, LLC, dated November 13, 2014.

As described in the sections below, the subject property is situated in a former industrial and currently underutilized area about one block south and west of Lake Union. Based on our history and site characterization studies, recent project experience nearby and our review of Ecology documents, a significant area-wide solvent-contaminated groundwater plume is present through much of this part of the South Lake Union neighborhood. The solvent plume is sourced from the former American Linen industrial laundry. This presence of this site is well known in the environmental community and has undergone some level of remediation at the source, but an extensive groundwater plume remains beneath several nearby properties; including the subject property. In addition to the solvent-plume from the upgradient American Linen site, benzene-contaminated groundwater has also migrated onto the subject property from the adjacent Seattle City Light Roy Street Shops site.

Our client is planning to purchase the subject property to begin the improvement and revitalization of this underutilized neighborhood. However, in order for the property transaction to be successful a NFA must be attainable for the subject property. It is not feasible or reasonable for our client to remediate other liable parties' contaminated groundwater plumes that extend onto the subject property in order to receive a NFA. Therefore, the proposed cleanup action outlined in this letter addresses soil and soil vapor contamination sourced from the subject property, but does not attempt to mitigate or remediate the contaminated-groundwater plumes extending onto the subject property from the large area-wide solvent-plume or the benzene-contaminated groundwater plumes that are affecting this neighborhood. However, the proposed cleanup action (remedial excavation, in-situ soil treatment and vapor mitigation) and property redevelopment (one-level of below grade structure) does allow for the potentially liable parties (PLPs) to monitor and clean up the contaminated groundwater plumes that extend onto the subject property.

The purposes of this letter and the enclosures are to:

1. enroll the subject property in the VCP,
2. summarize the results of the Phase I and II ESAs, and
3. present a conceptual cleanup action for the subject property.

We request from Ecology that a Project Manager who is familiar with the area-wide groundwater contamination in the South Lake Union neighborhood and has experience working on property redevelopments be assigned to this project. Additionally, we request that following Ecology's review of this letter and the enclosures, a "No Further Action (NFA) Likely" opinion letter be issued by Ecology for the subject property.

BACKGROUND

Proposed Property Use

The subject property is located on 9th Avenue near the southwest corner of Lake Union. This neighborhood was formerly an industrial area consisting of laundries, auto maintenance facilities and small manufacturing businesses. The approximate location of the subject property relative to surrounding physical features is shown on the Vicinity Map, Figure 1. The property is currently privately owned and is used by MAACO Auto Body and Repair for truck body assembly and welding, automobile body repair and servicing, and vehicle or truck painting, as shown in Photo 1.



Photo 1: Current property use as a MAACO Auto Body and Repair facility - looking north.

The proposed property redevelopment will consist of an at-grade new hotel building with up to one-level of underground parking set above the water table and eight stories above grade. The hotel will add much-needed capacity to Seattle and will begin the utilization and beautification of an underdeveloped neighborhood. Additionally, during the construction process an environmental cleanup will be conducted that will benefit the environment.

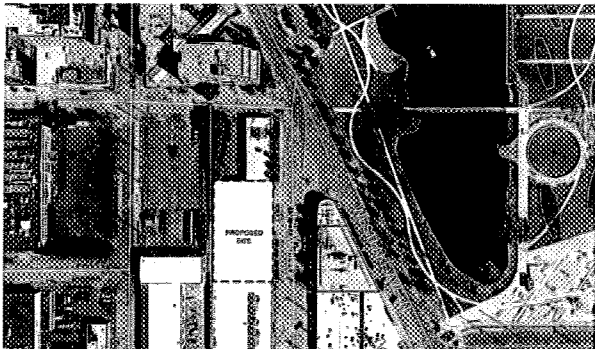


Photo 2 and 3: Proposed redevelopment relative to surrounding properties.

Setting

The subject property consists of approximately 0.52 acres, is relatively flat, and is located approximately 30 feet above mean sea level (per King County iMAP). Lake Union is located approximately 0.1 miles to the northeast and groundwater in the area reportedly flows toward Lake Union. The depth to groundwater measured in three monitoring wells installed on the subject property in 2014 ranged between approximately 21 to 24 feet below the ground surface. However, following the completion of a nearby construction project where significant dewatering was occurring, the depth to groundwater measured between approximately 13 and 18 feet below the ground surface.

GeoEngineers' recent explorations at the subject property identified up to 20 feet of sand and gravel fill overlying approximately 25 feet of native sand with silt and glacially compacted outwash deposits (sand, silt, gravel). Some fill material ranging from 5 to 10 feet below the ground surface contained organics, glass, wood, and debris.

Off-Property Sources of Contamination

There are several potential sources of soil and groundwater contamination in the vicinity of the subject property. However, two of the nearby potential sources of contamination are located upgradient of the subject property and have documented soil and groundwater contamination remaining on and migrating from the sites: American Linen Supply Company and Roy Street Shops, which are shown relative to the subject property on the Site Plan, Figure 2.

- **American Linen Supply Company** (American Linen) is located west and upgradient of the subject property. It was formerly an industrial laundry that used dry cleaning solvents and is a source of a significant solvent release to groundwater in the South Lake Union neighborhood. As shown in Figure 24 of the January 31, 2014 Sound Earth Strategies' Cleanup Action Plan for the American Linen property (Figure 24 included in Appendix B), vinyl chloride-contaminated groundwater has reportedly migrated from the American Linen site to the east and beneath the subject property. Soil vapor extraction and electrical resistive heating systems were reportedly operated between August and December of 2013 at the American Linen site in order to destroy solvents in soil and groundwater. Additionally, on-property and off-property injection wells were reportedly planned to be installed in 2014 or 2015, however the status of the injection wells are unknown and additional performance monitoring information has yet to be reviewed by Ecology. To our knowledge, no opinion has been registered by Ecology yet on the performance of the ongoing American Linen cleanup (and GeoEngineers' groundwater testing on the subject property indicate that a solvent contaminated groundwater plume still is present in the neighborhood).
- **Roy Street Shops** is located adjacent to the west and upgradient of the subject property. It was historically a maintenance facility for City of Seattle, Puget Sound Power & Light, and a gasoline service station. As shown in Figure 1 of the February 1995 RETEC report for the Roy Street Shops site (Appendix C, Figure 1 and chemical analytical results) benzene and petroleum contaminated soil and groundwater has been confirmed at the Roy Street Shops site and contaminated groundwater has reportedly migrated under the alley toward the subject property. A limited cleanup action (remedial excavation) was reportedly conducted in the immediate vicinity of the gasoline service station, however, based on documents available at Ecology, soil and groundwater contamination remained following the cleanup action and groundwater sampling has not been conducted since the early 1990s.

Subject Property Sources of Contamination

In addition to the off-property sources of contamination, there are also several potential sources of contamination on the subject property including:

- **Past light industrial uses at the subject property.** Truck body assembly and welding, automobile body repair and servicing, and/or vehicle or truck painting are currently conducted at the property, and have been conducted at the property since it was first developed in the early 1920s. Significant quantities of paints and automotive fluids (paints, oils, coatings) are currently and were likely historically used and stored at the subject property. Vehicle fueling is not known to have occurred

- **Soil vapor.** Benzene, low fraction total petroleum hydrocarbons, naphthalene, xylenes, 1,4-dioxane and/or tetrachloroethylene (PCE) were detected at concentrations greater than the MTCA Method B soil vapor screening levels in four of the soil vapor samples, which indicates there is a potential vapor intrusion threat at the subject property (Figure 5). The potential soil vapor sources include gasoline and benzene-contaminated soil on the subject property as well as the solvent-contaminated groundwater beneath the subject property.

SITE DESIGNATION

Based on the results of our Phase I and II ESA (RI), we have identified three “hazardous waste sites” (as defined in WAC 173-340-200) present on the subject property, as described below and presented in the attached Figure 6.

- **Site #1: Benzene-, gasoline- PAHs- and metals- contaminated Soil Site;** located on the western portion of the subject property generally between approximately ground surface and 15 feet below the ground surface. The contaminated soil resulted from current and former use of the property, including auto repair and maintenance, former USTs and a leaking oil/water separator.
- **Site #2: Vinyl Chloride-Contaminated Groundwater Site;** migrating onto the southeast portion of the subject property sourced from the American Linen site.
- **Site #3: Benzene-Contaminated Groundwater Site;** migrating onto the western portion of the subject property sourced from the Roy Street Shops site.

During property redevelopment, Site #1 will be remediated through excavation, according to the conceptual cleanup described in the section below. The data suggest that groundwater contamination identified as Sites #1 and #2 beneath the subject property originated from two off-site sources: the BETX and petroleum release from the adjacent Roy Street Shops site and the solvent release from the nearby American Linen site. Additionally, due to the presence of volatile-contaminants in groundwater migrating onto the site from adjacent properties, vapor mitigation, as described below, will likely be needed on the subject property.

Based on our recent experience and review of Ecology documents for nearby sites, a large solvent-contaminated groundwater plume sourced from the American Linen is present beneath much of this part of the South Lake Union neighborhood. Our proposed cleanup action addresses soil and soil vapor contamination sourced from the subject property (Site #1), but does not attempt to remediate other parties' contaminated-groundwater plume extending onto the subject property from the large area-wide solvent-plume or the benzene-contaminated groundwater plumes. However, the proposed cleanup action and property redevelopment (at grade or one-level of below grade structure) does allow for the liable parties to monitor and clean up the contaminated groundwater plumes that extend onto the subject property.

We note that according to the Revised Code of Washington (RCW) 70.105D.020 (22)(iv), commonly referred to as the “plume clause exemption,” a property owner is exempt from environmental liability from plumes that migrate onto their property from an off-property source as long as the property owner adheres to the following:

- “demonstrate that the hazardous substance has not been used, placed, managed, or otherwise handled on the property in a manner likely to cause or contribute to a release of the hazardous substance that has migrated onto the property;

on the property. Potential pathways for spills or releases to enter the subsurface include storm drains in the north building floor and in the northwest corner of the paved storage/work yard.

- **Closed-in-place heating oil underground storage tank (UST).** A 500-gallon heating oil UST was formerly in use in the northwest corner of the subject property storage yard. The UST was closed-in-place in 1999 but soil and groundwater sampling was not conducted at that time. Soil contamination may be present in the vicinity of the UST.
- **Fill material** impacted by metals, petroleum, and polycyclic aromatic hydrocarbons (PAHs) is commonly found in shallow soils in the South Lake Union area. Fill material containing fragments of glass, brick and other debris was identified in shallow soil during recent geotechnical and environmental borings at the site.

Phase II ESA (Remedial Investigation)

During the 2014 Phase II ESA (Remedial Investigation), four (4) hollow-stem auger borings and twelve (12) direct-push borings were completed at the subject property, with monitoring wells installed in three of the borings. Soil and groundwater samples were obtained from the borings/monitoring wells for chemical analysis. Additionally, sub-slab soil vapor samples were obtained from six locations across the property to characterize soil vapor and evaluate the potential for vapor intrusion caused by subsurface volatile contamination. Based on the geologic information and chemical analytical results obtained during this study we concluded the following regarding the subject property:

- **Contaminated and dangerous waste soil.** Petroleum, metals, benzene, ethylbenzene, naphthalene and/or polycyclic aromatic hydrocarbon (PAH)-contaminated soil exceeding MTCA cleanup levels is present on the subject property and lead is present at one location (DP-2) at a concentration that exceeds the dangerous waste threshold. Additionally, a significant amount of debris (plastic, wood, glass, metal, and other unidentifiable garbage) was encountered on the western portion of the property in borings MW-3, GEI-4, DP-2, DP-8, DP-9, DP-11 and DP-12 between approximately 5 and 15 feet below the ground surface. The approximate locations of the borings as well as a visual summary of the chemical analytical results of the soil samples obtained from the borings are shown on Figure 3.
- **Groundwater.** Groundwater samples were obtained from the three monitoring wells (MW-1, MW-2, and MW-3) for chemical analysis. Benzene, vinyl chloride, and/or arsenic were detected at concentrations greater than their respective MTCA Method A Cleanup levels in monitoring wells MW-2 and/or MW-3. No contaminants of concern were detected at concentrations greater than MTCA cleanup levels in monitoring well MW-1 (at the northeast quadrant of the property [furthest downgradient well]) (Figure 4). There are multiple potential sources of benzene-contaminated groundwater beneath the subject property, however, the most likely source is the Roy Street Shops site because gasoline- and benzene- contaminated groundwater was confirmed in monitoring wells located in the alley immediately adjacent and upgradient of the subject property (see Figure 4). The presence of arsenic at the subject property could be related to background conditions, reducing conditions associated with petroleum hydrocarbons, and/or related to a degrading debris layer at the property. The source of the vinyl chloride-contaminated groundwater is likely the solvent release at American Linen, as described above and presented in Appendix B. Additionally, halogenated volatile organic compounds (HVOCs) were not detected in soil samples obtained from the subject property, but vinyl chloride was detected in groundwater, so the most likely source is the significant solvent release from the upgradient American Linen site.

- has not caused or contributed to the release of the hazardous substance;
- does not engage in activities that damage or interfere with the operation of remedial actions installed on the person's property or engage in activities that result in exposure of humans or the environment to the contaminated groundwater that has migrated onto the property; and
- allows the department, potentially liable persons who are subject to an order, agreed order, or consent decree, and the authorized employees, agents, or contractors of each, access to the property to conduct remedial actions required by the department.”

The redevelopment design for the subject property is cognizant that additional long-term actions will be needed by others' in the neighborhood and does not prohibit access to the groundwater beneath the subject property.

CONCEPTUAL CLEANUP ACTION

Conceptual Cleanup Action Plan

The soil and groundwater contamination on the subject property will be remediated concurrent with property redevelopment. The cleanup action described below meets the “minimum requirements for cleanup actions” (WAC 173-340-360(2)). Specifically, the actions: (1) can be completed within a relatively short period of time, (2) meets threshold requirements described by MTCA (e.g. protects human health and the environment, complies with cleanup standards, complies with state and federal laws and provides for compliance monitoring), (3) is expected to be more effective than other available methods in achieving concentrations that are protective of human health and the environment, (4) is permanent, and (5) considers public concerns.

Our proposed remedial approach to address the contamination on the subject property includes the following:

- **Remedial Excavation of Contaminated Soil.** A remedial excavation will be conducted to remove soil with contaminants of concern at concentrations greater than the MTCA Method A Cleanup level. Contaminated soil is generally located on the western portion of the property. The remedial excavation will extend approximately 15 feet below the ground surface (direct contact point of compliance for protection of human exposure via direct contact (WAC 173-340-70 (6)(d)), which will remove the contaminated soil at the property with the exception of localized benzene-contaminated soil identified in the northwest portion of the property.
- **Injection of Chemical Oxidation.** Following the completion of the remedial excavation, benzene-contaminated soil will remain below 15 feet below the ground surface in an isolated location on the northwestern portion of the property at a concentration greater than the MTCA Method A cleanup level. Although the deep benzene-contaminated soil in this area is likely a result of the benzene-contaminated groundwater plume from the Roy Street Shops site, based on a recommendation from Louise Bardy at the Department of Ecology during our November 14, 2014 meeting with, the remedial approach will include injecting chemical oxidation (or similar) into the subsurface to treat the benzene-contaminated soil in this location. Treating the benzene-contaminated soil in this location will address the neighboring contamination issue, but will likely speed cleanup and achieve regulatory acceptance for the subject property.

- **Installation of a Chemical Vapor Barrier.** Volatile-contaminated groundwater, including PCE and vinyl chloride from the American Linen site and BTEX from the Roy Street Shops site, will remain beneath the subject property following the completion of the remedial excavation and in-situ chemical oxidation. During construction, a chemical vapor barrier will be installed beneath the entire building footprint to prevent vapor intrusion issues. Additionally, new utilities will be placed above the high groundwater table and low permeability dams will be constructed to preferential pathways will not be developed.

We appreciate your review of the enclosed documents and look forward to speaking with a representative of Ecology about this complex neighborhood and our proposed cleanup action for the subject property. We request from Ecology that a Project Manager who is familiar with the area-wide groundwater contamination in the South Lake Union neighborhood and has experience working on property redevelopments be assigned to this project. Additionally, we request that following Ecology's review of this letter and the enclosures, a "No Further Action (NFA) Likely" opinion letter be issued by Ecology for the subject property. We anticipate that an Ecology Project manager will be assigned and that we will receive a response from Ecology with 90-days of submitting our application to the VCP.

Sincerely,
GeoEngineers, Inc.



Jessica Smith, LG
Environmental Project Manager



David A. Cook, LG, CPG
Environmental Principal

JAS: DAC:lw

Attachments:

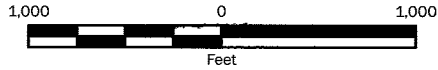
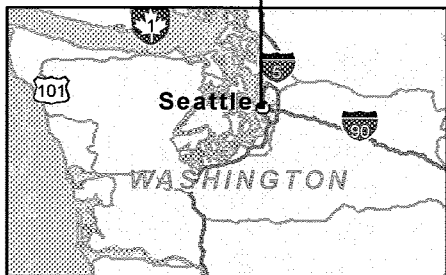
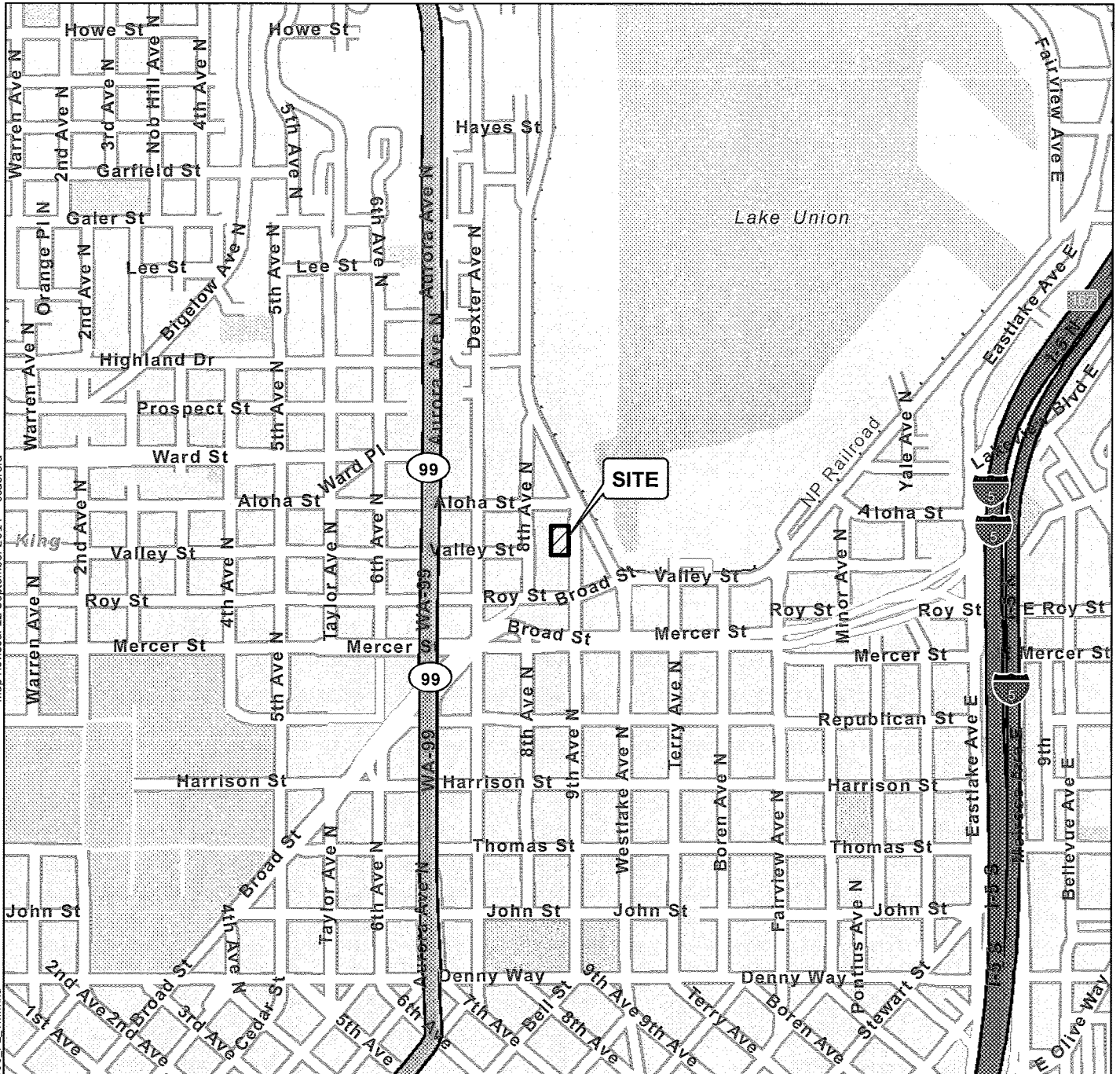
- Figure 1. Vicinity Map
- Figure 2. Historic Site and adjacent Property Feature
- Figure 3. Boring Locations and Soil Chemical Analytical Results
- Figure 4. GW Chemical Analytical Results
- Figure 5. Soil Vapor Chemical Analytical Results
- Figure 6. Site Designation
- Appendix A. VCP Application and Agreement
- Appendix B. Vinyl Chloride-Contaminated Groundwater Plume from American Linen
- Appendix C. Gasoline- and BTEX-Contaminated Groundwater Plume from Roy St. Shops Site

cc: White/Peterman Properties, Inc.

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

Map Revised: 12 September 2014 cabrera


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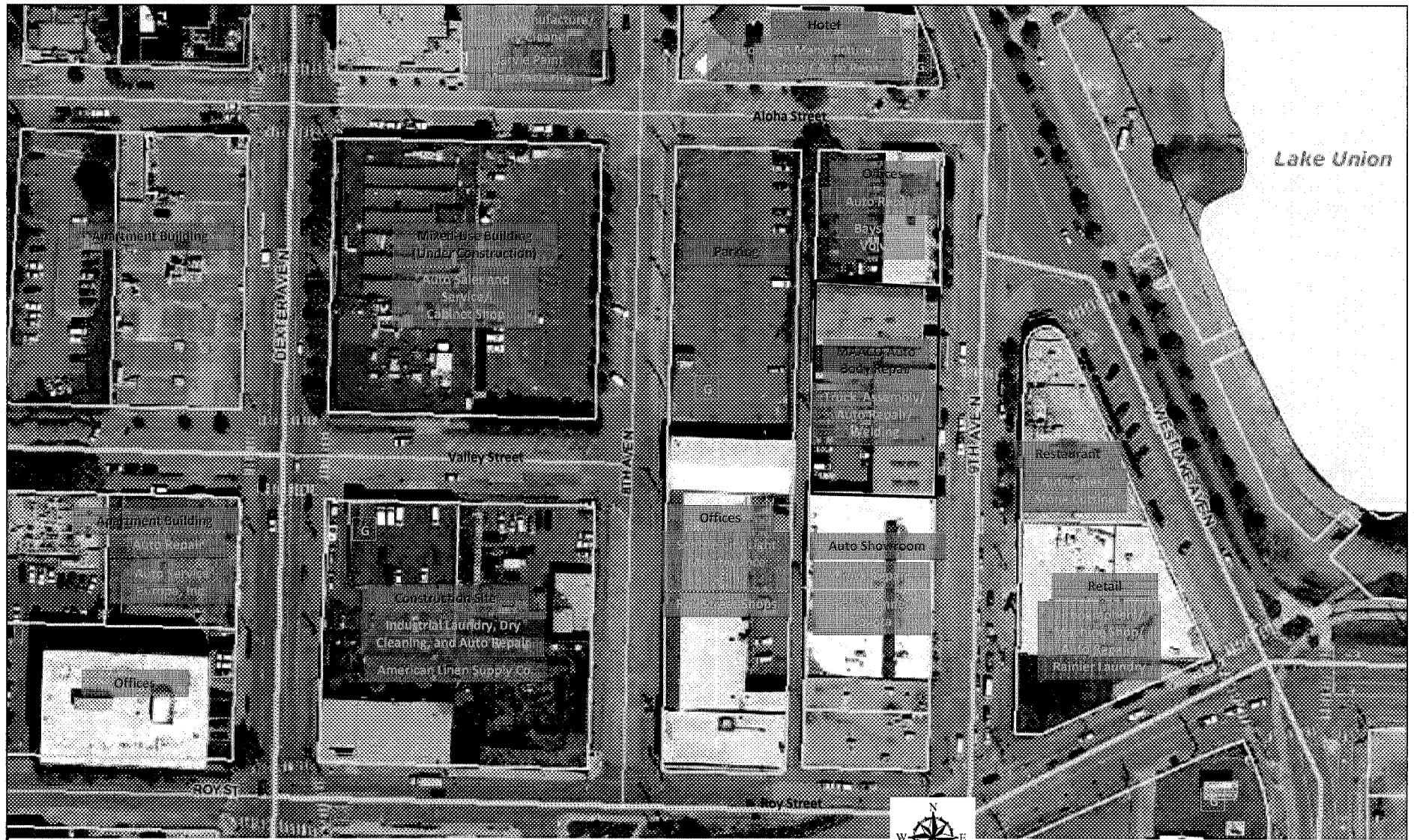


Data Sources: ESRI Data & Maps


- 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.

Projection: NAD 1983 UTM Zone 10N


Vicinity Map	
Seattle Marriott AC Seattle, Washington	
GEOENGINEERS 	Figure 1



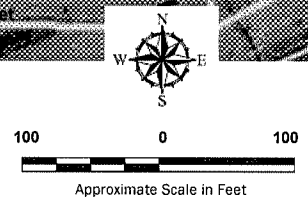
Lake Union

 Approximate Subject Property Boundary

 Approximate Former Gas Station Location

 Parcel Boundaries

Current site use is identified in PINK
 Historical site use is identified in GREEN
 Ecology cleanup site names are identified in ORANGE



Historic Site and Adjacent Property Features

South Lake Union Marriott AC
 739 9th Avenue North
 Seattle, Washington

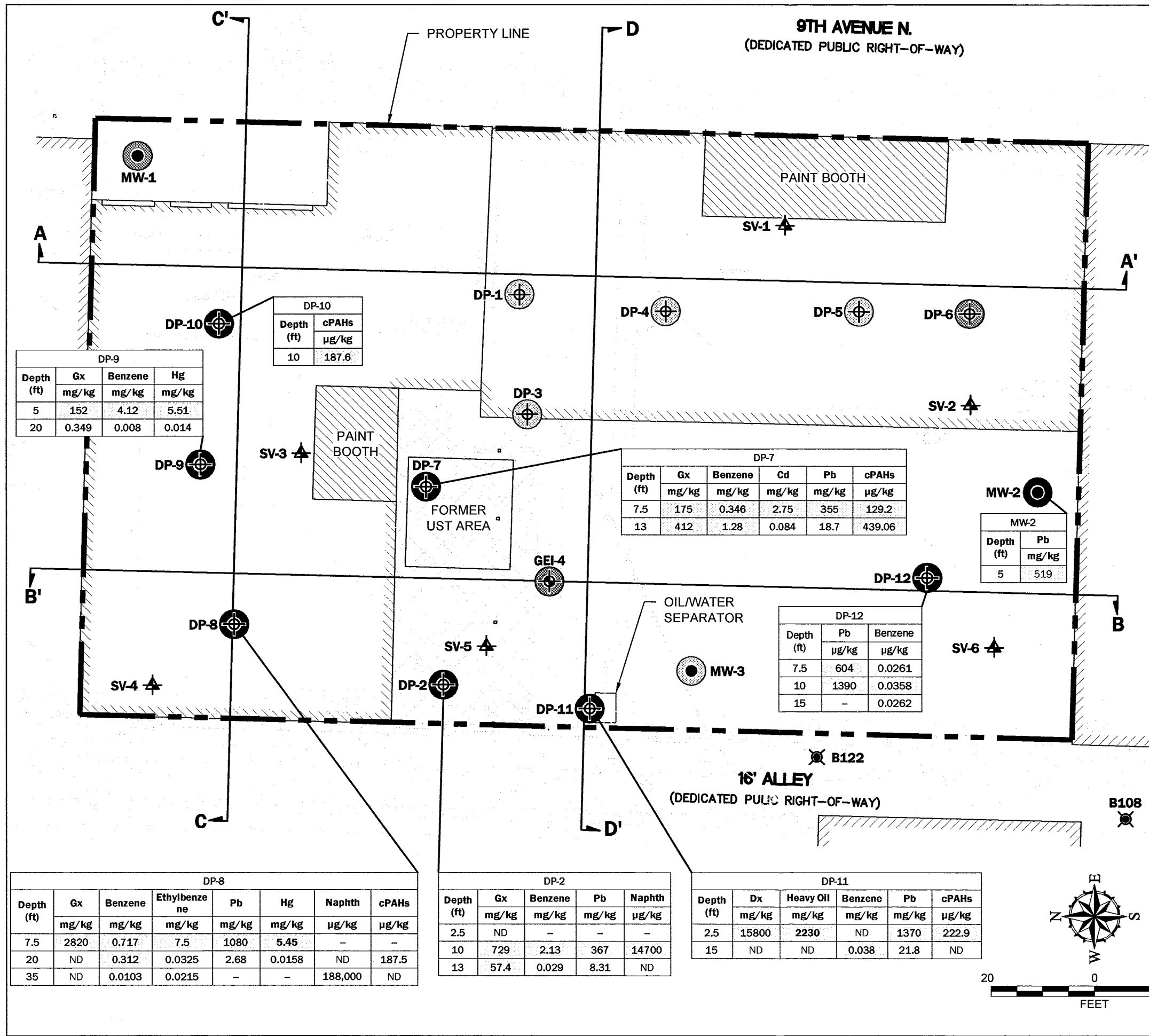


Figure 2

20776-003-00

Source: 2009 aerial photograph from King County IMAP

P:\20\20776003\00\CAD\20776003-00 SITE PLAN AND CROSS-SECTIONS ENVIRONMENTAL.DWG\TAB:SITE PLAN - LANDSCAPE MODIFIED BY THICHAUD ON OCT 01, 2014 - 14:36



Legend

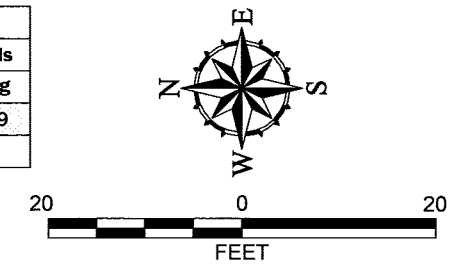
- GEI-4 ⊕ Hollow-Stem Auger Boring by GeoEngineers, 2014
- DP-1 ⊕ Direct Push Boring by GeoEngineers, 2014
- MW-1 ● Monitoring Well by GeoEngineers, 2014
- SV-1 ⊕ Sub-Slab Soil Vapor Sample Location
- B112 ⊕ Boring by Sound Earth Strategies, 2012
- A-A' ⊕ Cross-Section Location
- Contaminants of concern detected at concentrations greater than the MTCA Method A cleanup levels.
- ⊙ Contaminants of concern detected at concentrations less than the MTCA Method A cleanup levels.
- ⊗ Contaminants of concern were not detected; metal concentrations were detected below natural background concentrations.
- Gx= Gasoline-range petroleum hydrocarbons
- Dx= Diesel-range petroleum hydrocarbons
- Heavy Oil= Heavy oil-range petroleum hydrocarbons
- Cd= Cadmium
- Pb= Lead
- Hg= Mercury
- Naphth= Naphthalene
- cPAHs= Carcinogenic PAHs

Notes

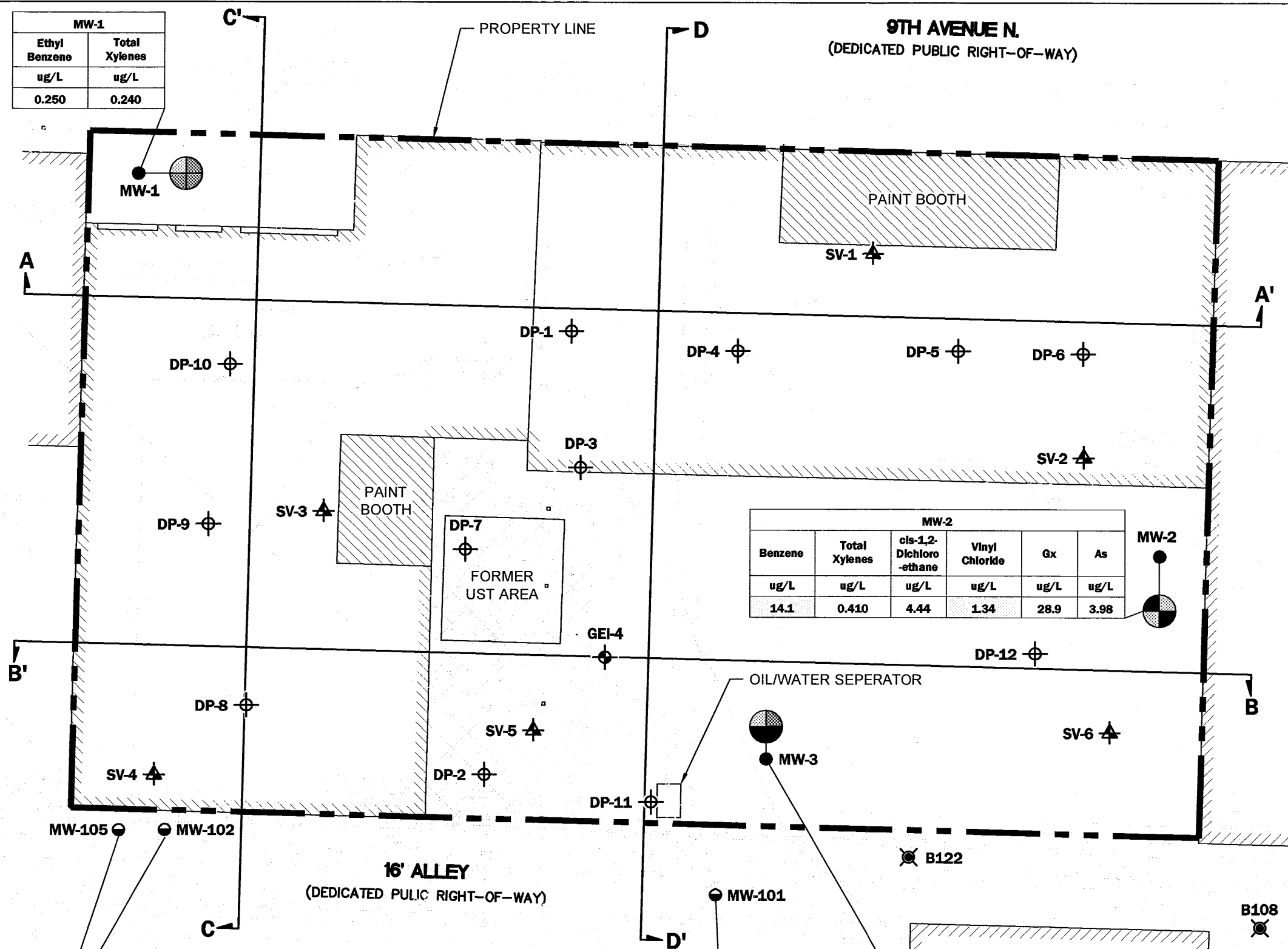
1. Only analytes detected at concentrations greater than the corresponding MTCA Method A or B cleanup levels are shown in the data boxes above. For a full list of soil chemical analytical detections, see Tables 1-3.
2. Shading indicates analyte detected at a concentration greater than the MTCA Method A or B cleanup level.
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.

Reference: Base Land Title Survey by Bush, Roed & Hitchings dated 6-28-14.

Boring Locations and Soil Chemical Analytical Results	
South Lake Union Marriott AC Seattle, Washington	
GEOENGINEERS	Figure 3



P:\20120776003\00\CAD\20776003-00 SITE PLAN GW CHEMICAL DATA.DWG\TAB:SITE PLAN - LANDSCAPE MODIFIED BY TRICHAUD ON NOV 05, 2014 - 13:49



MW-1	
Ethyl Benzene	Total Xylenes
ug/L	ug/L
0.250	0.240

MW-2					
Benzene	Total Xylenes	cis-1,2-Dichloro-ethane	Vinyl Chloride	Gx	As
ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
14.1	0.410	4.44	1.34	28.9	3.98

MW-102				
Benzene	Ethyl Benzene	Toluene	Total Xylenes	Gx
ug/L	ug/L	ug/L	ug/L	ug/L
970	280	200	1,300	10,000

MW-105				
Benzene	Ethyl Benzene	Toluene	Total Xylenes	Gx
ug/L	ug/L	ug/L	ug/L	ug/L
390	91	43	280	3,200

MW-101				
Benzene	Ethyl Benzene	Toluene	Total Xylenes	Gx
ug/L	ug/L	ug/L	ug/L	ug/L
810	1,200	100	1,700	19,000

MW-3					
Benzene	Total Xylenes	Cis-1,2-Dichloro-ethane	1,2-Dichloro-ethane	Vinyl Chloride	As
ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1.69	0.610	9.03	4.34	3.14	7.60

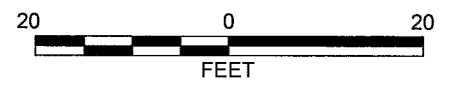
Legend

- MW-101 ● Monitoring Well Sampled for Urban Development, LLC, 2002
- GEI-4 ⊕ Hollow-Stem Auger Boring by GeoEngineers, 2014
- DP-1 ⊕ Direct Push Boring by GeoEngineers, 2014
- MW-1 ● Monitoring Well by GeoEngineers, 2014
- SV-1 ⊕ Sub-Slab Soil Vapor Sample Location
- B112 ⊕ Boring by Sound Earth Strategies, 2012
- A-A' ⊕ Cross-Section Location

Chemical Analytical Results of Discrete Soil Samples

- | | | |
|---|---|---|
| BETX
(Benzene, Ethylbenzene,
Toluene and Xylenes) | ⊕ | Gasoline-Range
Petroleum Hydrocarbons |
| Arsenic | ⊕ | HVOCs
(Halogenated Volatile
Organic Compunds) |

- | | |
|---|--|
| ■ | Contaminants of concern detected at concentrations greater than the MTCA Method A cleanup levels. |
| ▨ | Contaminants of concern detected at concentrations less than the MTCA Method A cleanup levels. |
| □ | Contaminants of concern were not detected; metal concentrations were detected below natural background concentrations. |



Notes

1. Only analytes detected at concentrations greater than the corresponding laboratory detection levels are shown in the data boxes above. For a full list of groundwater chemical analytical detections, see Table 4.
2. Shading indicates analyte detected at a concentration greater than the MTCA Method A or B cleanup.
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. Reference: Base Land Title Survey by Bush, Roed & Hitchings dated 6-28-14.

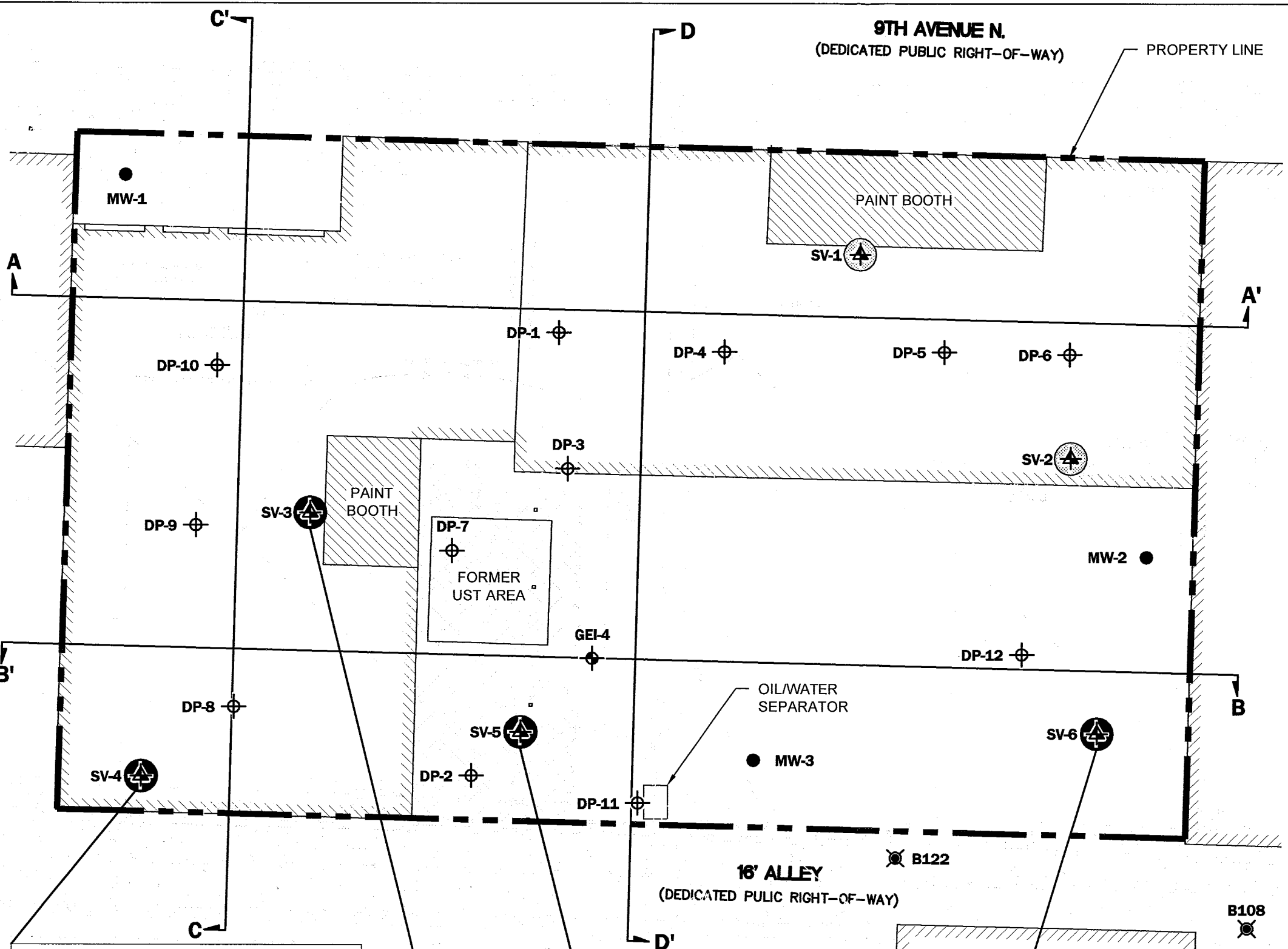
Groundwater Chemical Analytical Results

South Lake Union Marriott AC
Seattle, Washington



Figure 4

P:\2017\6003\00\CAD\20176003-00 SITE PLAN SOIL VAPOR CHEMICAL DATA.DWG\TAB:SITE PLAN - LANDSCAPE MODIFIED BY TRICHAUD ON OCT 01, 2014 - 15:51



Legend

- GEI-4 Hollow-Stem Auger Boring by GeoEngineers, 2014
- DP-1 Direct Push Boring by GeoEngineers, 2014
- MW-1 Monitoring Well by GeoEngineers, 2014
- SV-1 Sub-Slab Soil Vapor Sample Location
- B112 Boring by Sound Earth Strategies, 2012
- Cross-Section Location
- Contaminants of concern detected at concentrations greater than the MTCA Method B soil vapor screening levels.
- Contaminants of concern detected at concentrations less than the MTCA Method B soil vapor screening levels.
- Contaminants of concern were not detected.

Notes

1. Only analytes detected at concentrations greater than the corresponding MTCA Method A or B cleanup levels are shown in the data boxes above. For a full list of soil vapor chemical analytical detections, see Table 5.
2. The locations of all features shown are approximate.
3. 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.

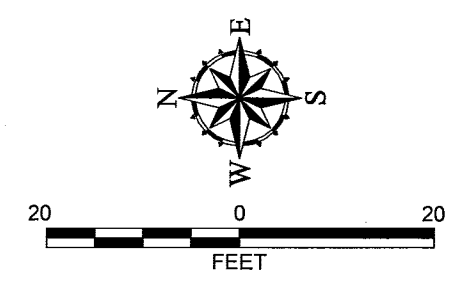
Reference: Base Land Title Survey by Bush, Roed & Hitchings dated 6-28-14.

SV-4				
TPH (low fraction)	Benzene	1,4-Dioxane	Naphthalene	1,2,4-Trimethylbenzene
µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
4,100	54	18	94	54

SV-3					
TPH (low fraction)	Benzene	Naphthalene	1,2,4-Trimethylbenzene	m&p-Xylene	o-Xylene
µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
16,000	25	520	130	1,800	780

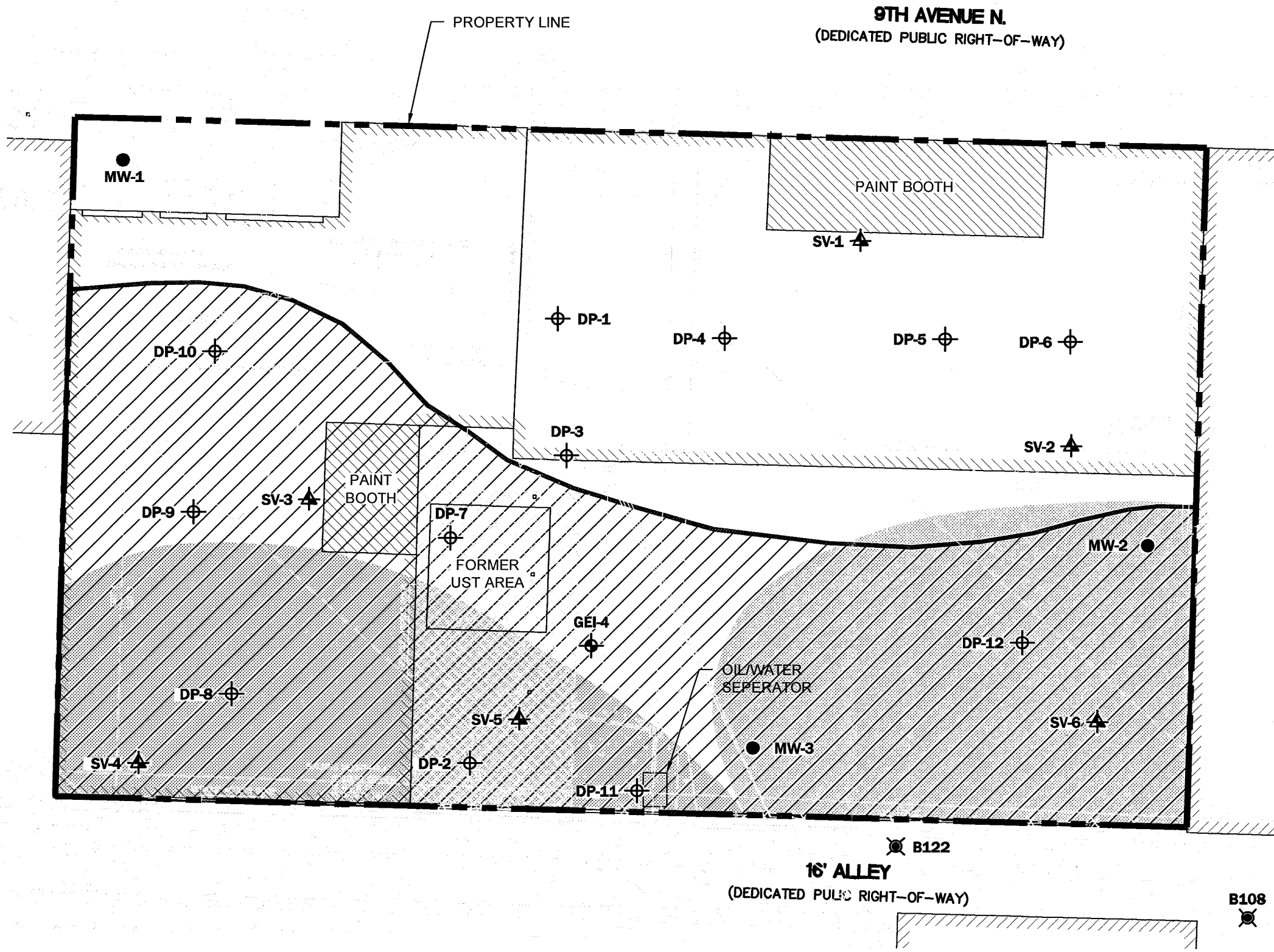
SV-5			
TPH (low fraction)	Benzene	1,4-Dioxane	Tetrachloroethylene
µg/m3	µg/m3	µg/m3	µg/m3
3,600	15	40	2,400

SV-6	
Benzene	Tetrachloroethylene
µg/m3	µg/m3
4.2	120



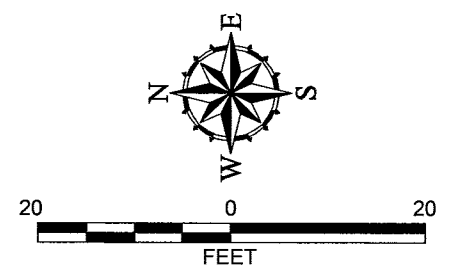
Soil Vapor Chemical Analytical Results	
South Lake Union Marriott AC Seattle, Washington	
	Figure 5

P:\20\20776003\00\CAD\20776003-00 Fig 6 SITE DESIGNATION.DWG\TAB:SITE PLAN - LANDSCAPE MODIFIED BY TRICHAUD ON FEB 13, 2015 - 14:36



Legend

- GEI-4 Hollow-Stem Auger Boring by GeoEngineers, 2014
- DP-1 Direct Push Boring by GeoEngineers, 2014
- MW-1 Monitoring Well by GeoEngineers, 2014
- SV-1 Sub-Slab Soil Vapor Sample Location
- B112 Boring by Sound Earth Strategies, 2012
- SITE #1** Contaminated soil between approximately 0-15 feet below the ground surface.
- SITE #2** Vinyl-chloride-contaminated groundwater from the nearby American Linen site.
- SITE #3** Benzene-contaminated groundwater from the adjacent Roy St. Shops site.



Notes

1. Only analytes detected at concentrations greater than the corresponding MTCA Method A or B cleanup levels are shown in the data boxes above. For a full list of soil chemical analytical detections, see Tables 1-3.
2. Shading indicates analyte detected at a concentration greater than the MTCA Method A or B cleanup level.
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.

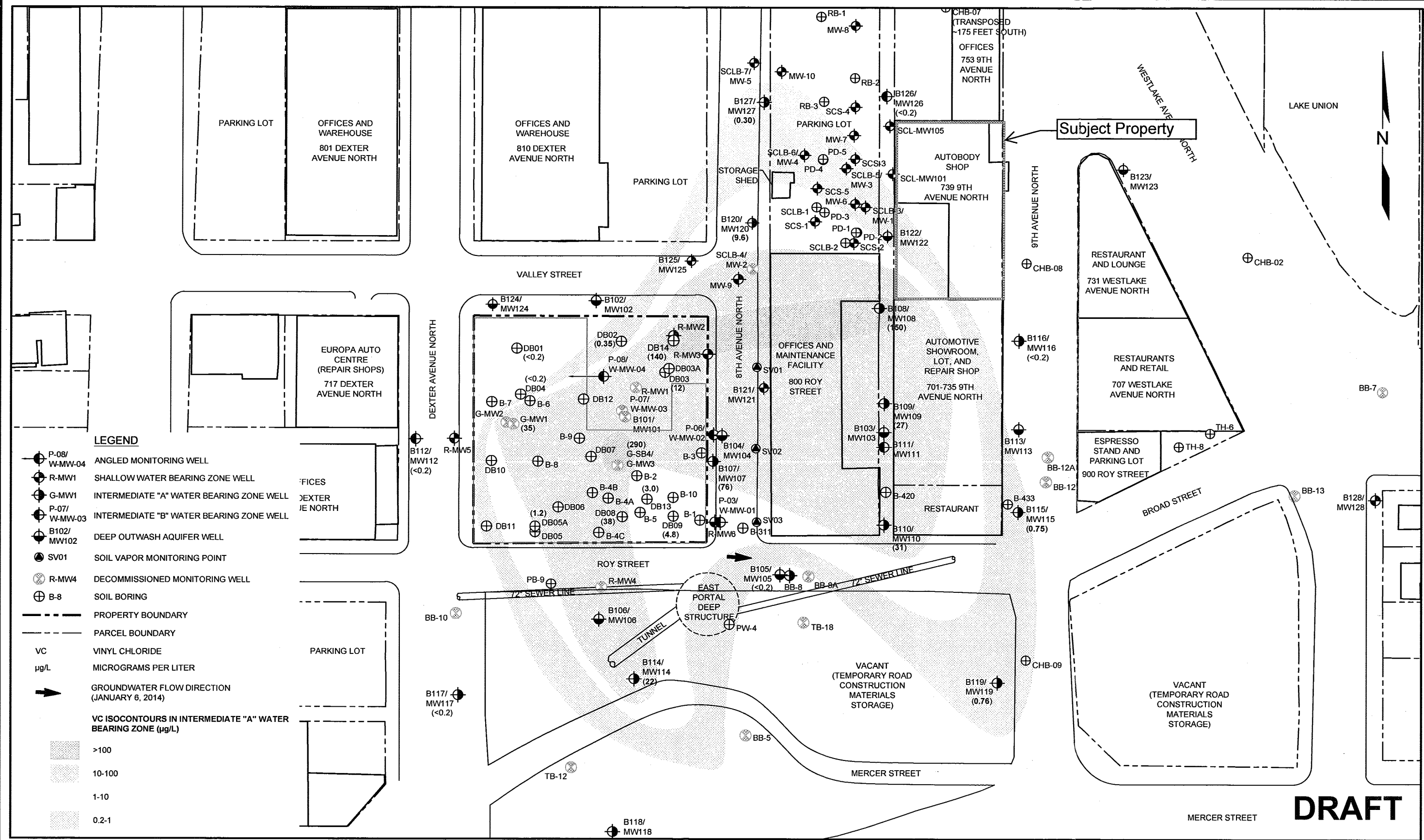
Reference: Base Land Title Survey by Bush, Roed & Hitchings dated 6-28-14.

Site Designation	
South Lake Union Marriott AC Seattle, Washington	
	Figure 6

APPENDIX A
VCP Application and Agreement

APPENDIX B
Vinyl Chloride-Contaminated Groundwater Plume
from American Linen

P:\0797 FRONTIER ENV.MGMT\700 DEXTER\TECHNICAL\CAD\2014\CAP\0797-001_2014CAP_ISO_INT_VC.DWG 1/28/2014



DRAFT



DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2014CAP_ISO_INT_VC

PROJECT NAME: 700 DEXTER PROPERTY
 PROJECT NUMBER: 0797-001
 STREET ADDRESS: 700 DEXTER AVENUE NORTH
 CITY, STATE: SEATTLE, WASHINGTON

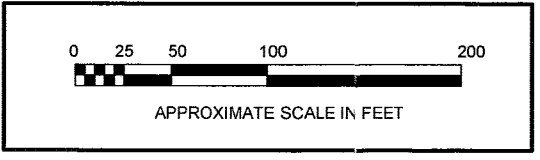
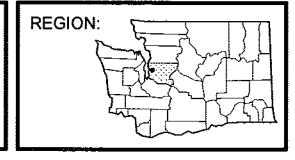


FIGURE 24
 VC ISOCONTOURS IN
 INTERMEDIATE "A" WATER-BEARING ZONE

APPENDIX C
Gasoline- and BTEX-Contaminated Groundwater Plume
from Roy Street Shops Site

DRAFT

MW-103

MAACO property.

Roy St. Shops site. Source of benzene- and gasoline-contaminated groundwater migrating onto the MAACO property.

USTs reportedly installed by Puget Power and Light prior to 1955. The 2,700-gal. UST is reportedly the source of the groundwater contamination extending onto the MAACO property.

Approximate groundwater flow direction. Groundwater is about 15-20 feet bgs.

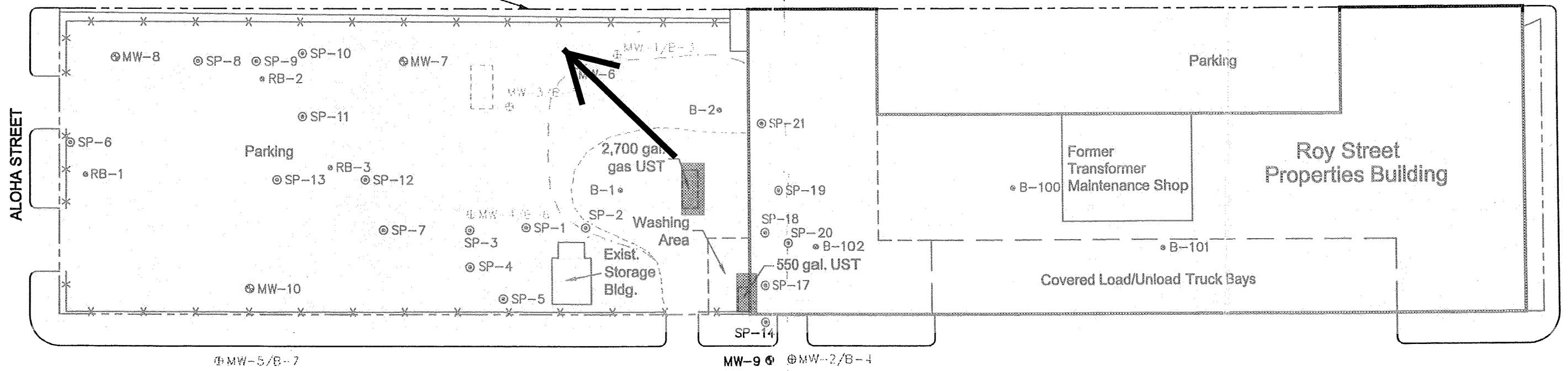
MW-Aloha

Architecture Firm

Maaco Auto Painting

Bayside

MW-105 MW-102 MW-101
Property Line 15' ALLEY

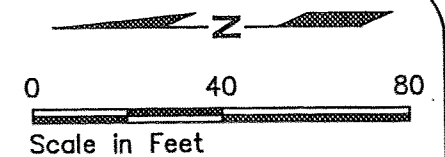


Legend

- ⊙ Existing Monitoring Well Location
- ⊕ Abandoned Monitoring Well Location
- Soil Boring Location
- ⊙ Strataprobe Location
- - - Approximate Extent of PCS Excavation
- - - Approximate Extent of UST Excavation

Futon Dealer

Maryatt Industries



DWG NAME: G:\project\Clients\UrbanRedevelopment\RoyStreet\royst001.dwg
DATE: 06/05/02 2:07pm



Urban Redevelopment
URBAN REDEVELOPMENT, LLC

802 Roy Street Building
Seattle, Washington

Figure 1
Site Features and Exploration Plan

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 07/02/02
 Date Received: 06/21/02
 Project: Roy St. Properties
 Date Extracted: 06/21/02
 Date Analyzed: 06/21/02, 06/24/02 and 06/26/02

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
 FOR BENZENE, TOLUENE, ETHYLBENZENE
 XYLENES AND TPH AS GASOLINE
 USING EPA METHOD 8021B AND NWTPH-Gx
 Results Reported as µg/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 81-124)
MW-101 d 206206-01	810	100	1,200	1,700	19,000	124
MW-102 d 206206-02	970	200	280	1,300	10,000	116
MW-105 d2 206206-03	390	43	91	280	3,200	122
MW-9 206206-04	<1	<1	<1	<1	<50	106
Method Blank	<1	<1	<1	<1	<50	107

d - The sample was diluted. Detection limits are raised due to dilution.

d2 - The sample was diluted for benzene. Detection limits are raised due to dilution.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/27/02
 Date Received: 06/10/02
 Project: Roy St. Properties
 Date Extracted: 06/12/02
 Date Analyzed: 06/12/02 and 06/13/02

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
 FOR BENZENE, TOLUENE, ETHYLBENZENE,
 XYLENES AND TPH AS GASOLINE
 USING EPA METHOD 8021B AND NWTPH-Gx
 Results Reported on a Dry Weight Basis
 Results Reported as µg/g (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 76-118)
B-100, S1 206081-01	<0.02	<0.02	<0.02	<0.02	<1	109
B-100, S2 206081-02	<0.02	<0.02	<0.02	<0.02	<1	107
MW-102, S1 206081-03	0.67	0.47	1.0	2.5	99	113
MW-102, S2 206081-04	0.05	<0.02	0.12	0.07	2	107
MW-105, S2 d 206081-06	2.1	1.5	11	24	650	114
MW-105, S4 206081-08	0.05	<0.02	<0.02	0.03	<1	107
Method Blank	<0.02	<0.02	<0.02	<0.02	<1	101

d - The sample was diluted. Detection limits are raised due to dilution.