
DRAFT CLEANUP ACTION PLAN



Property:

700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Prepared for:

Frontier Environmental Management, LLC
1821 Blake Street, Suite 3C
Denver, Colorado

Report Date:

September 28, 2015

DRAFT – ISSUED FOR REGULATORY REVIEW

Draft Cleanup Action Plan

700 Dexter Property

700 Dexter Avenue North
Seattle, Washington 98109

Prepared for:

Frontier Environmental Management, LLC
1821 Blake St, Suite 3C
Denver, Colorado 80202

Project No.: 0797-001

Prepared by:

DRAFT

Tom Cammarata, LG, LHG
Senior Geochemist

Reviewed by:

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John R. Funderburk, MSPH
Principal

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
1,1-DCE	1,1-dichloroethylene
µg/L	micrograms per liter
µg/m ³	micrograms per cubic meter
Affected ROWs	portions of Valley, Roy, and Broad Streets and 8 th , 9 th , and Westlake Avenues North
ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAP	Draft Cleanup Action Plan
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-dichloroethylene
CLARC	cleanup levels and risk calculations
COC	chemical of concern
CSM	conceptual site model
CSO	combined sewer overflow
DNAPL	dense nonaqueous-phase liquids
DRPH	diesel-range petroleum hydrocarbons
Ecology	Washington State Department of Ecology
EDB	1,2-dibromoethane
EDC	1,2-dichloroethane
EPA	U.S. Environmental Protection Agency
ERH	electrical resistance heating
FS	feasibility study

ACRONYMS AND ABBREVIATIONS (CONTINUED)

FS Report	Feasibility Study Report
ft/day	feet per day
ft/ft	feet per foot
GRPH	gasoline-range petroleum hydrocarbons
HASP	Project-Specific Health and Safety Plan
HSA	hollow-stem auger
kg	kilogram
LNAPL	light nonaqueous-phase liquids
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTCA	Washington State Model Toxics Control Act
mV	millivolts
NAVD88	North American Vertical Datum of 1988
NFA	No Further Action
NWTPH	Northwest Total Petroleum Hydrocarbon
ORP	oxidation-reduction potential
ORPH	oil-range petroleum hydrocarbons
PAH	polycyclic aromatic hydrocarbon
PCE	tetrachloroethylene
pcf	pounds per cubic foot
PCS	petroleum-contaminated soil
PCU	power control unit
PID	photoionization detector

ACRONYMS AND ABBREVIATIONS (CONTINUED)

the Property	700 Dexter Avenue North, Seattle Washington
QA/QC	quality assurance/quality control
RAO	remedial action objective
RCW	Revised Code of Washington
RI	remedial investigation
RI Report	Remedial Investigation Report
ROW	right-of-way
SAP	Sampling and Analysis Plan
SDOT	City of Seattle Department of Transportation
the Site	soil, soil vapor, and groundwater contaminated with one or more of the following: gasoline-, diesel-, and oil-range petroleum hydrocarbons; tetrachloroethylene; trichloroethylene; vinyl chloride; and cis-1,2-dichloroethylene, beneath the Property and portions of the south- and east-adjointing properties, as well as beneath the 8 th , 9 th , and Westlake Avenues North and Valley, Roy, and Broad Streets rights-of-way
SM	Standard Method
SoundEarth	SoundEarth Strategies, Inc.
SPU	Seattle Public Utilities
SVE	soil vapor extraction
TCE	trichloroethylene
TESC	temporary erosion and sediment control
TMP	temperature monitoring points
trans-1,2-DCE	trans-1,2-dichloroethylene
TSDF	treatment, storage, and disposal facility
USC	United State Code
UST	underground storage tank

ACRONYMS AND ABBREVIATIONS (CONTINUED)

VOC	volatile organic compound
WAC	Washington Administrative Code
Windward	Windward Environmental LLC

EXECUTIVE SUMMARY

SoundEarth Strategies, Inc. has prepared this Draft Cleanup Action Plan for the 700 Dexter Property located at 700 Dexter Avenue North in Seattle, Washington (the Property), on behalf of 700 Dexter, LLC. In accordance with the Washington State Model Toxics Control Act Regulation in Parts 120 and 350 of Chapter 340 of Title 173 of the Washington Administrative Code (WAC), 700 Dexter, LLC performed a remedial investigation sufficient to define the extent of contamination and characterize the Site (defined below) for the purpose of developing and evaluating the cleanup action alternatives summarized in the Feasibility Study Report prepared by SoundEarth Strategies, Inc. and detailed in this Draft Cleanup Action Plan. This Draft Cleanup Action Plan is being prepared as part of an independent action to support a Prospective Purchaser Consent Decree (PPCD) that is being pursued for the Property and will address the on-Property remedial action as well off-Property compliance monitoring. The PPCD will allow for redevelopment of the Property in accordance with WAC 173-340-520 (c).

The Site includes soil, soil vapor, and groundwater contaminated primarily with one or more of the following: tetrachloroethylene, trichloroethylene, vinyl chloride, and cis-1,2-dichloroethylene, beneath the Property and portions of the south- and east-adjointing properties, as well as beneath the 8th, 9th, and Westlake Avenues North and Valley, Roy, and Broad Streets rights-of-way. In addition, gasoline-, diesel-, and oil-range petroleum hydrocarbons are present at lower concentrations at the Property. The impacts beneath the Site likely are associated with the following: (1) a release of chlorinated solvents from the industrial laundry and dry cleaning facility that operated on the Property between 1925 and 1995 and (2) the operation of at least two refueling facilities that historically operated on the northern portion of the Property and on the east-adjointing properties. The highest historical concentrations of chlorinated solvents were located in the west-central portion of the Property.

The results of previous subsurface investigations and the remedial investigation conducted at the Site suggest chlorinated solvent impacts in soil and groundwater beneath the Site are the result of a release from the laundry and dry cleaning facility that operated on the Property from 1925 through 1995. Concentrations of tetrachloroethylene and associated chemicals of concern in the soil decrease rapidly upgradient of the source area and are carried through advective transport downgradient of the source area. Vertical distribution of solvent-contaminated soil is limited in large part by the presence of a layer of hard silt that underlies the Property at elevations between -5 and 5 feet above sea level (i.e., 35 to 45 feet below ground surface). The majority of the solvent mass is held up by the silt layer; the remaining soil contamination within groundwater extends up to 80 feet below ground surface.

The highest concentrations of chlorinated solvents have been detected within the shallow and intermediate water-bearing zones, with relatively low levels detected in the deep water-bearing zone. The elevated concentrations of chlorinated solvents detected in groundwater collected from the deep water-bearing zone consistently drop during subsequent sampling events.

The lateral distribution of tetrachloroethylene is consistent with groundwater flow direction. Tetrachloroethylene in groundwater extends from the Property downgradient to 9th Avenue North. The lateral distribution of chlorinated solvent contamination is bound to the north by monitoring wells MW102, MW123, MW124, and MW126; to the west by monitoring wells MW112 and MW117; and to the south by monitoring well MW118. The eastern extent of the plume appears to end approximately 450 to 500 feet east of the Property based on the relatively low concentrations of vinyl chloride

EXECUTIVE SUMMARY (CONTINUED)

detected in monitoring wells MW113 and MW115, although a secondary source appears to be present based on the dramatic increase of vinyl chloride concentration detected in monitoring well MW128. Several historical land use practices in this area could have resulted in a release of chlorinated solvents to the subsurface associated with this secondary source.

Concentrations of petroleum hydrocarbons exceed their respective cleanup levels in soil and groundwater samples collected on the northern portion of the Property and within the 8th Avenue North right-of-way. The petroleum contamination is limited and attributed to the historical operation of refueling facilities on the Property and on the east-adjointing properties. The petroleum hydrocarbon contamination appears vertically limited to the shallow and intermediate water-bearing zones. The lateral distribution of petroleum contamination in soil and groundwater is bound to the west by monitoring well W-MW-04, to the north by monitoring wells MW125 and MW-9, to the east by monitoring well MW121, and to the south by monitoring well W-MW-02.

Based on the results of the remedial investigation and completion of a conceptual site model, a feasibility study was conducted to develop and evaluate cleanup action alternatives that would facilitate selection of a final cleanup action for the Site in accordance with WAC 173-340-350(8).

Based on the results of the feasibility study, Cleanup Alternative 1, Electrical Resistance Heating/Soil Vapor Extraction, Excavation of Petroleum-Contaminated Soil, and In Situ Reductive Dechlorination of Groundwater was the selected alternative for the Site because it ranks comparatively high in environmental benefit and is both technically feasible and cost effective. Cleanup Alternative 1 satisfies requirements of the Washington State Model Toxics Control Act and significantly reduces risk from contamination to the maximum extent practicable by using in situ treatment to reduce groundwater contamination within the active groundwater treatment area to reach the proposed cleanup levels within a reasonable restoration time frame.

The selected Cleanup Action Plan focused on remediating the source area via operation of a 37,943-square-foot electrical resistance heating system within the high contaminant concentration areas, followed by in situ reductive dechlorination to treat the residual contaminant plume. The electrical resistance heating/soil vapor extraction system was implemented as an interim remedial action at the Property from July to December of 2013. The system included 165 electrodes that heated the subsurface to approximately 100 degrees Celsius to convert the dissolved contaminants to the vapor phase for subsequent recovery by vapor extraction. During the treatment period, over 12,000 pounds of chlorinated solvents as volatile organics were removed from the subsurface. The next phase of the Clean Up Action Plan includes implementation of in situ reductive dechlorination system to treat the groundwater. The electrodes associated with the electrical resistive heating system were installed to allow for the injection of a carbohydrate amendment. A field-based adaptive design will be utilized for the in situ reductive chlorination portion of the cleanup action, and a portion of the electrode locations will be used as injection locations depending on the ability of the formation to accept amendment. In addition, a portion of these locations will be supplemented with deeper injection locations to distribute a carbohydrate amendment. A component of the amendment injection system will include a biological barrier wall on the eastern and southern Property boundaries to limit further migration of chemicals of concern in groundwater at elevated concentrations.

EXECUTIVE SUMMARY (CONTINUED)

Following treatment, and as part of the planned redevelopment, the Property may be excavated from lot line to lot line to remove the soil within the vadose zone to allow for subgrade parking and/or utilities. The installation of subgrade parking also will manage vapors below the building. This aggressive source area treatment and subgrade parking will immediately reduce threats to human health and the environment and will contribute significantly to the future cleanup of the Site.

It is anticipated the groundwater plume south of Roy Street and east of 8th Avenue North would be addressed by intrinsic bioremediation. The treatment of the source zone with electrical resistance heating and soil vapor extraction significantly reduced concentrations in the groundwater beneath the Property. In situ groundwater treatment on the Property will further reduce the concentrations in groundwater beneath the Property and Site, significantly changing the plume equilibrium conditions downgradient from the Property. Intrinsic bioremediation is already occurring in the groundwater south of Roy Street and east of 8th Avenue North as evident by the presence of tetrachloroethylene degradation compounds in the groundwater.

Performance soil and groundwater monitoring has been completed on the Property. Performance and confirmational soil and groundwater monitoring off-Property will be conducted at the proposed compliance points following the completion of the cleanup action. Groundwater monitoring will continue until compliant analytical results for groundwater samples have been collected, at which time 700 Dexter, LLC will request a No Further Action determination for the Site.

This executive summary is presented solely for introductory purposes, and the information contained in this section should be used only in conjunction with the full text of this report. A complete description of the project, Site conditions, investigation results, cleanup action objectives, implementation of the selected cleanup action, and associated compliance monitoring is contained within this report.

1.0 INTRODUCTION

On behalf of 700 Dexter, LLC, SoundEarth Strategies, Inc. (SoundEarth) has prepared this Draft Cleanup Action Plan (CAP) for the 700 Dexter Property located at 700 Dexter Avenue North in Seattle, Washington (the Property). The location of the Property is shown on Figure 1. This CAP was developed to meet the requirements of a CAP as defined by the Washington State Model Toxics Control Act (MTCA) Regulation in Part 380 of Chapter 340 of Title 173 of the Washington Administrative Code (WAC 173-340-380). In accordance with WAC 173-340-120(4)(a) and 173-340-350(6), 700 DEXTER LLC has performed a remedial investigation (RI) sufficient to define the extent of contamination and characterize the Site (defined below) for the purpose of developing and evaluating cleanup action alternatives summarized in the Feasibility Study Report (FS Report) prepared by SoundEarth (2013b) and detailed in this CAP.

The Site is defined by the full lateral and vertical extent of contamination that has resulted from the former operations of a commercial laundry, dry cleaning facility, and gasoline service stations on the Property. Based on the information gathered to date, the Site includes soil, soil vapor, and groundwater contaminated primarily with one or more of the following: tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (cis 1,2 DCE), and vinyl chloride, beneath the Property and portions of the south and east-adjointing properties, as well as beneath the 8th, 9th, and Westlake Avenues North and Valley, Roy, and Broad Streets rights-of-way (ROWs). In addition, gasoline-, diesel-, and oil-range petroleum hydrocarbons (GRPH, DRPH, and ORPH, respectively) are present at lower concentrations at the Property (Figure 2).

1.1 DOCUMENT PURPOSE AND OBJECTIVES

The purpose of this CAP is to satisfy the specific requirements of MTCA in accordance with WAC 173-340-380, 173-340-400, and 173-340-410. The CAP presents historical information regarding the source and extent of impacts beneath the Site and outlines the proposed plan to address the impacts that remain beneath the Site.

This CAP is organized into the following sections:

- **Section 2.0, Background.** This section provides a description of the Site features and location; a summary of the current and historical uses of the Site and adjoining properties; and a description of the Site's environmental setting, including the local meteorology, geology, and hydrology.
- **Section 3.0, Previous Environmental Investigations.** The text for this section, which provides a summary of previous investigations, summary of data gaps, and summary of the 2013 interim action from the RI, is included as Appendix A of this CAP.
- **Section 4.0, Remedial Investigation.** This section provides a description of the RI field work program conducted at the Site between 2013 and 2015, including a summary of the pre-field activities, scope of work, results, a data validation review.
- **Section 5.0, Conceptual Site Model Summary.** This section provides a conceptual understanding of the contaminant distribution beneath the Property derived from the results of the historical research and the subsurface investigations. Included is a discussion of the confirmed and

suspected source areas, the chemicals of concern (COCs), media of concern, contaminant fate and transport, and the potential exposure pathways.

- **Section 6.0, Technical Elements.** This section presents the remedial action objectives (RAOs), applicable or relevant and appropriate requirements (ARARs), COCs, media of concern, development of the cleanup standards, and points of compliance.
- **Section 7.0, Selected Cleanup Action.** This section describes the components of the cleanup action, including the cleanup action implementation documents, engineering design components, and construction activities for the Site. In addition, it provides a management plan that describes the steps necessary in the event that previously unidentified contamination or underground storage tanks (USTs) are encountered during excavation activities for petroleum-contaminated soil.
- **Section 8.0, Cleanup Action Implementation Plan.** This section provides a description of the cleanup action components that have been and will be implemented in order to remediate soil and groundwater containing concentrations of COCs exceeding the cleanup levels beneath the Site.
- **Section 9.0, Compliance Monitoring.** This section describes the protection, performance, and confirmational monitoring that has and will be conducted as part of the cleanup action.
- **Section 10.0, Documentation Requirements.** This section describes the documentation to be provided as part of the cleanup action and includes a discussion of document management, waste disposal tracking, and compliance reports.
- **Section 11.0, Limitations.** This section discusses document limitations.
- **Section 12.0, Bibliography.** This section lists the references used to prepare this document.

2.0 BACKGROUND

This section provides a description of the Site features and location; a summary of historical Site use; and a description of the local geology, hydrology, and land use pertaining to the Site. Historical documentation referenced in this section is provided in the Remedial Investigation Report (RI Report), prepared by SoundEarth (SoundEarth 2013a).

2.1 SITE LOCATION AND DESCRIPTION

The Site is defined by the extent of contamination caused by the releases of hazardous substances at the Property, as summarized in Section 1.0, above. The Property and adjoining properties, including the ROWs, affected by the release(s) from the Property are described in the following subsections and presented on Figure 2.

2.1.1 The Property

The Property is comprised of a single tax parcel (King County parcel number 224900-0285) that covers approximately 61,440 square feet (1.4 acres) of land in the South Lake Union neighborhood of Seattle, Washington. The Property is listed at 700 Dexter Avenue North. 700 Dexter, LLC currently owns the Property (King County iMAP 2013a).

The on-Property buildings were demolished in February and March 2013. The Property was formerly improved with a building with four additions, including the following: the original 1925-

vintage, single-story building with basement and mezzanine (Building A) in the southeastern portion of the Property; a 1947-vintage, single-story masonry garage (Building B) in the northeast portion of the Property; a 1947-vintage, one-story addition with basement and mezzanine in the southwestern portion of the Property; and a 1966-vintage, single-story concrete building with basement and mezzanine in the northwestern portion of the Property (Building C).

Building A was reportedly heated by a natural-gas-fueled hot water furnace. Potable water and sewer services are not currently provided to the Property. However, according to the earliest side sewer cards of the Property maintained by the City of Seattle Engineering Department, the sanitary sewer was connected to the Property in 1925. Seattle City Light provides electricity to the Property. No waste disposal services are currently provided to the Property.

The former Property improvements are presented in plan view on Figure 3.

2.1.2 South-Adjoining Property

The south-adjoining property is located to the south of Roy Street and consists of two tax parcels (King County parcel numbers 224900-0080 and 224900-0055), which are bisected by the Broad Street ROW underpass. The parcels cover approximately 27,250 square feet (0.63 acres) of land. The property is currently being utilized as a parking and storage lot for the Mercer Corridor Project. The south-adjoining property is owned by City of Seattle Department of Transportation (SDOT).

2.1.3 East-Adjoining Properties

The east-adjoining properties include the tax parcels bounded by 8th and Westlake Avenues North to the west and east, respectively, and by the extension of Valley and Roy Streets to the north and south, respectively. The descriptions of the parcels located within the east-adjoining properties are summarized below.

2.1.3.1 800 Roy Street Parcel

The parcel listed at 800 Roy Street adjoins the Property to the east, beyond the 8th Avenue North ROW. The 800 Roy Street parcel consists of a single tax parcel (King County parcel number 408880-3530) that covers approximately 67,025 square feet (1.54 acres) of land. A 1926-vintage, one-story warehouse with a basement building occupies the southern half of the property. An asphalt-paved parking lot with storage structures is located to the north of the building. Seattle City Light currently owns the property and operates it as a maintenance facility for its vehicles and equipment. A self-pay parking lot occupies the northern portion of the parcel.

2.1.3.2 701–753 9th Avenue North Parcels

To the east of 800 Roy Street is an alley, beyond which are four tax parcels listed as 701, 711, 739, and 753 9th Avenue North (King County parcel numbers 408880-3565, 408880-3440, 408880-3485, and 408880-3435). The four parcels collectively cover approximately 65,827 square feet (1.51 acres) of land. From south to north, the tax parcels are currently owned by W-T 701 Holdings VII LLC, Double M Properties LLC, and 9th & Aloha LLC.

From south to north, the 701–753 9th Avenue North parcels are currently improved with three masonry buildings: one 1922-vintage, one-story building; one 1924-vintage, two-story building; and one 1955-vintage, one-story building. The parcels are occupied by Buca di Beppo restaurant, Ducati motorcycle dealership and service facility, Maaco Auto Body facility, and a landscape architecture office.

2.1.3.3 900 Roy Street and 707–731 Westlake Avenue North Parcels

To the east of the Property across 9th Avenue North are three tax parcels listed as 900 Roy Street, 707 Westlake Avenue North, and 731 Westlake Avenue North (King County parcel numbers 408880-3495, 408880-3500, and 408880-3510). The parcels collectively cover approximately 38,911 square feet (0.89 acres) of land. The parcels are currently owned by SDOT, Pacific Properties Northwest LLC, and Kenney Family Properties LLC.

From south to north, the 900 Roy Street and 707 and 731 Westlake Avenue North parcels are currently improved with three masonry buildings: one 1941-vintage, one-story building; one 1914-vintage, two story building; and one 1921-vintage, two-story building. They are currently occupied by Urban City Coffee, Tap Plastics, People’s Bank, Trago restaurant, RoRo’s Barbeque restaurant, and World’s Sports Grill.

2.1.4 Affected Rights-of-Way

The affected ROWs within the Site include portions of Valley, Roy, and Broad Streets and 8th, 9th, and Westlake Avenues North (Affected ROWs), maintained by the City of Seattle. According to City of Seattle’s Arterial Classifications Zoning Map, Roy Street is zoned as a minor arterial from Dexter Avenue North to 9th Avenue North and as a principal arterial from 9th Avenue North eastward. Broad Street and Westlake Avenue North are also zoned as principal arterials. Valley Street and 8th Avenue North are zoned as access streets. According to SDOT’s traffic flow maps from 2011, principal arterials within the Site receive an annual average daily traffic of between 23,900 and 35,100 vehicles.

2.2 LAND USE HISTORY OF THE SITE

The historical usage of each affected property, as defined in Section 2.1, is briefly summarized in the following subsections. A more detailed discussion, as well as selected aerial photographs, available King County Archived Records, City of Seattle archived building permit files, and files provided by the former Property owner, is provided in the RI Report (SoundEarth 2013a). Relevant historical features of the Property and affected Properties and ROWs within the Site are depicted on Figures 3 through 7.

2.2.1 The Property

Residences exclusively occupied the Property from at least 1893 until 1925, when Building A was constructed on the southern half of the Property. In 1930, a refueling facility was constructed on the northwest corner of the Property and was reportedly equipped with several USTs and two dispenser islands. Building additions were constructed to the north between 1947 and 1966. Building B was constructed in the northeast portion of the Property as an addition to Building A in 1947 and operated initially as a parking garage and automotive repair facility. Four 6,000-gallon USTs containing heating oil in association with the boiler system were installed beneath Building A in 1947. Building C was constructed on the northwest portion of the Property in 1966. The 1930-vintage gasoline service station was demolished the same year. Building C housed laundry operations, a garage, and offices. A fuel dispenser with as many as three USTs was constructed on the northeast portion of the Property between 1947 and 1966. Building plans indicate that dry cleaning was conducted on the Property as early as 1966. According to reports by others, washing machines operated on the western portion of Building A in the 1966 and reportedly leaked solvents into the subsurface. The dry cleaning machines were no longer present on the Property by 1990. In 1986, Building B was redeveloped as a wastewater treatment facility for the commercial laundry operations, and several aboveground storage

tanks containing acids, caustics, polymers, sludge, and water were installed. Waste material derived from the wastewater treatment facility was either directly discharged through the sewer system or conveyed into a disposal container to the north of Building B. In the mid-1990s, commercial laundry operations ceased, the wastewater treatment system was removed, and the buildings were leased to various tenants, including several automotive repair shops, a bakery, and a car rental office. Historical Property features discussed below are also presented on Figures 3 through 6.

2.2.2 South-Adjoining Property

Earliest records indicate that the south-adjoining property originally encompassed an entire city block, bounded by Roy and Mercer Streets and Dexter and Vine (currently 8th) Avenues North to the north, south, west, and east, respectively. The property was originally developed with several residences. Between 1924 and 1930, a diagonal portion of the property was vacated, most of the residences demolished, and Broad Street constructed. Two gasoline service stations and auto repair shops were constructed on the property shortly thereafter. In 1950, a paint manufacturer occupied the southeast portion of the property, and in 1956, additional portions of the south-adjoining property were vacated, most of the aboveground structures were demolished, and the Broad Street Underpass was constructed. The remaining portions of the property were purchased by the City of Seattle in 1971, and the remaining aboveground structures were demolished the following year.

2.2.3 East-Adjoining Properties

The historical usage of the affected parcels within the east-adjoining properties, as defined in Section 2.1.3, is summarized in the following subsections.

2.2.3.1 800 Roy Street Parcel

The 800 Roy Street parcel was created by filling events conducted along the southern Lake Union shoreline from the late 1800s until the 1920s. Several residences and rustic cabins occupied the 800 Roy Street Parcel until 1926, when the existing warehouse was constructed. The 800 Roy Street parcel operated as maintenance facility for vehicles and equipment by Puget Sound Power and Light Co. (currently Seattle City Light). A garage located in the northern portion of the building's basement was used to repair, refuel, and wash vehicles. Transformer testing was also performed in the basement. The northern half of the property was used as a vehicle, transformer, fuel, and equipment storage area. Between 1944 and 1955, at least two generations of fuel dispensers and associated USTs were installed on the northern portion of the parcel. Two USTs were reportedly removed in 1993. Washington State Department of Ecology (Ecology) records indicate the former operation of the former UST systems on the parcel resulted in impacts to the subsurface. The property is currently undergoing cleanup activities.

2.2.3.2 701–753 9th Avenue North Parcels

The 701–753 9th Avenue North parcels were created by filling events along the southern Lake Union shoreline in the early 1900s. According to historical records, the parcels remained undeveloped until 1922, when an automotive sales showroom, sales, and service shop was constructed on the southern half of the property and was operated by Mack International Motor Truck Corporation. Between 1946 and 1950, three additional buildings were constructed on the property and were occupied by an automotive welding factory, automotive repair shops, and general retail. As many as four USTs containing waste oil, heating oil, and gasoline were installed beneath the parcels. Ecology and City of Seattle Engineering Department records

indicate that four USTs were removed from the parcels. By 1980, the buildings on the parcels were primarily occupied by automotive dealerships and retail tenants. Impacts to soil were confirmed in 1992 when three of the USTs, located in the northernmost parcel, were removed. In 1996, Maaco Auto Body facility started operating out of the central portion of the property and installed a flammable liquids storage room and a spray paint booth.

2.2.3.3 900 Roy Street and 707–731 Westlake Avenue North Parcels

The 900 Roy Street and 707–731 Westlake Avenue North parcels were created by filling events along the southern Lake Union shoreline in the early 1900s. According to historical records, the parcels remained undeveloped until 1914, when a one-story masonry building was constructed. A laundry facility operated on the southern parcel in 1917, and by the 1930s it was replaced by a gasoline service station and automotive repair shop. In 1921, a two-story masonry building was constructed in the central parcel and was initially occupied by a lithograph manufacturer and later by a sheet metal fabrication and painting shop. In 1941, the retail gasoline station was replaced and continued operating as an automotive repair shop until at least the 1960s. By 1969, the buildings were occupied by an automotive sales and repair facility. Between 1990 and 2011, all three buildings were remodeled and changed in use from industrial to food service, retail, or residential. Multiple USTs were installed beneath the parcels and were used to store heating oil, waste oil, and fuel.

2.2.4 Affected Rights-of-Way

Valley and Roy Streets and 8th Avenue North ROWs were constructed before 1893, the earliest date of records available for review. Westlake Avenue North was constructed with planks on piles over Lake Union by 1893. Cabins and small structures were present within these ROWs until around 1905. By 1912, filling activities within Lake Union allowed for the expansion of 8th Avenue North, the conversion of Westlake Avenue North from planks to terrestrial material, and the construction of 9th Avenue North. The affected portion of Broad Street, bisecting the south-adjointing property, was constructed by 1917. The Affected ROWs were all paved by 1937. Between 1953 and 1958, the Broad Street ROW was expanded and the Broad Street Underpass was constructed, which required excavation of soil, abandonment or rerouting of existing utilities, and dewatering. Between 1985 and 2002, major tunneling activities were conducted as part of the Denny Way Combined Sewer Overflow (CSO) and Mercer Street Tunnel project. Large-diameter utilities were installed beneath Broad and Roy Street ROWs. In 2011, the 9th Avenue North sewer line was replaced.

2.3 FUTURE LAND USE

700 Dexter, LLC purchased the Property from American Linen Supply Company in 2015. 700 Dexter, LLC plans to sell the Property to a vertical developer who will likely build a multi-use commercial/retail building with subgrade parking.

2.4 ENVIRONMENTAL SETTING

This section provides a summary of the environmental setting of the Site.

2.4.1 Meteorology

Climate in the Seattle area is generally mild and experiences moderate seasonal fluctuations in temperature. Average temperatures range from 40s in the winter to the 60s in the summer. The coldest month of the year is January, which has an average minimum temperature of 36.00

Fahrenheit (°F), while the warmest month of the year is August, which has an average maximum temperature of 74.90 °F.

The annual average precipitation in the Seattle area is 38.25 inches; the wettest month of the year is December, when the area receives an average precipitation of 6.06 inches (IDcide 2013).

2.4.2 Topography

The Site and vicinity lie within the Puget Trough or Lowland portion of the Pacific Border Physiographic Province. The Puget Lowland is a broad, low-lying region situated between the Cascade Range to the east and the Olympic Mountains and Willapa Hills to the west. In the north, the San Juan Islands form the division between the Puget Lowland and the Strait of Georgia in British Columbia. The province is characterized by roughly north-south-oriented valleys and ridges, with the ridges that locally form an upland plain at elevations of up to about 500 feet above sea level North American Vertical Datum of 1988 (NAVD88). The moderately to steeply sloped ridges are separated by swales, which are often occupied by wetlands, streams, and lakes. The physiographic nature of the Puget Lowland was prominently formed by the last retreat of the Vashon Stade of the Fraser Glaciation, which is estimated to have occurred between 14,000 and 18,000 years before present (Waite Jr. and Thorson 1983).

The Site is located on a topographically low-lying area within the South Lake Union Neighborhood of Seattle. Elevations range from 80 feet (northwest corner of the Property) to 60 feet (southeast corner of the Property) NAVD88 and slopes east-northeast toward Lake Union (King County 2013). Lake Union is located approximately 0.1 miles to the east of the Property, and Elliot Bay is located approximately 1 mile to the southwest of the Property (USGS 1983).

2.4.3 Groundwater Use

According to the Ecology Water Well Logs database (Ecology 2012), two water supply wells are located at 100 Fourth Avenue North, approximately 0.5 miles southwest of the Site. The two supply wells were installed on the property owned by Fisher Broadcasting in 1999 and 2001. The wells were drilled to depths of 148 and 155 feet below ground surface (bgs). Each well was fitted with 10 feet of screen from the well bottom. These water supply wells reviewed in Ecology's database encountered static water levels between 77 and 80 feet bgs, but appear hydrologically upgradient from the water-bearing zones encountered in the monitoring wells installed at the Site. The purpose of the wells is unknown, but it is unlikely that they are used as a potable water source.

Seattle Public Utilities (SPU) provides the potable water supply to the City of Seattle. SPU's main source of water is derived from surface water reservoirs located within the Cedar and South Fork Tolt River watersheds (City of Seattle 2014). According to King County's Interactive Map for the County's Groundwater Program, there are no designated aquifer recharge or wellhead protection areas within several miles of the Site (King County IMAP 2013b).

2.5 GEOLOGIC AND HYDROGEOLOGIC SETTING

The following sections summarize the regional geology and hydrogeology in the Site vicinity, as well as the geologic and hydrogeologic conditions encountered beneath the Site.

2.5.1 Regional Geology and Hydrogeology

According to *The Geologic Map of Seattle—A Progress Report* (Troost et al. 2005), the surficial geology in the vicinity of the Site consists of deposits corresponding to the Vashon Stade of the

Fraser Glaciation and pre-Fraser glacial and interglacial periods. In the immediate Site vicinity, surficial deposits have been mapped as anthropogenic fill, Vashon-age recessional sand, glacial till, ice-contact deposits, advance sand deposits, pre-Fraser Olympia beds, and pre-Fraser undifferentiated glacial and nonglacial deposits (Troost et al. 2005).

Near-surface deposits in developed areas with associated regrading and reclamation have been deposited with anthropogenic fill, which may include reworked native near-surface deposits mixed with organic materials and debris. Fill thicknesses in such areas can exceed 30 feet.

The youngest pre-Fraser deposits in the Seattle area, known as the Olympia beds, were deposited during the last interglacial period, approximately 18,000 to 70,000 years ago, and underlie the fill material. The Olympia beds consist of very dense, fine to medium, clean to silty sands and intermittent gravel channel deposits interbedded with hard silts and peats (Troost and Booth 2008, Galster and Laprade 1991). Organic matter and localized iron-oxide horizons are common. The Olympia beds have known thicknesses of up to 80 feet. Beneath the Olympia beds are various older deposits of glacial and nonglacial origin. In general, deposits from older interglacial and glacial periods are similar to deposits from the most recent glacial cycle because of similar topographic and climactic conditions (Troost and Booth 2008).

Often difficult to distinguish from, but frequently found within and below similar depth intervals as, the pre-Fraser deposits, Vashon glacial advance sand deposits consist of very dense sand with variable gravel contents and generally little fines, with local interbeds or inclusions of fine-grained deposits, particularly near the upper and lower contacts of the formation. The deposits can be massive or bedded, and are locally at least 200 feet thick (Troost et al. 2005).

The Vashon ice-contact deposits in the vicinity of the Site are generally discontinuous, highly variable in thickness and lateral extent, and consist of loose to very dense, intermixed glacial till and glacial outwash deposits. The till typically consists of sandy silt with gravel. The outwash consists of sand and gravel, with variable amounts of silt (Troost et al. 2005).

The Vashon recessional outwash deposits in the vicinity of the Site are generally discontinuous and consist of loose to very dense layered sand and gravel, which are generally well sorted (poorly graded). Layers of silty sand and silt are less common. The Vashon recessional lacustrine deposits consist of layered silt and clay, which range in plasticity from low to high and may contain localized intervals of sand or peat. The recessional lacustrine deposits may grade into recessional outwash deposits (Troost et al. 2005).

The glacial and nonglacial deposits beneath the Seattle area comprise the unconsolidated Puget Sound aquifer system, which can extend from ground surface to depths of more than 3,000 feet. Coarse-grained units within this sequence generally function as aquifers and alternate with fine-grained units that function as aquitards (Vaccaro et al. 1998). Above local or regional water table aquifers, discontinuous perched groundwater may be present in coarse-grained intervals seated above fine-grained intervals. Below the regional water table, the alternating pattern of coarse- and fine-grained units results in a series of confined aquifers. Regional groundwater flow is generally from topographic highs toward major surface water bodies such as Puget Sound and Lake Union. Vertical hydraulic gradients are typically upward near the major surface water bodies, and downward inland (Floyd Snider McCarthy Team 2003, Vaccaro et al. 1998).

2.5.2 Site Geology

Based on the results of the investigations summarized in later sections of this report, subsurface soil beneath the site consists primarily of anthropogenic fill locally mantling recent lacustrine

deposits, Vashon-age glacial deposits, and possible pre-Fraser glacial deposits. The locations of the borings and wells advanced at the Site are shown on Figure 8. Cross sections depicting subsurface soil characteristics and geologic units encountered in the explorations are presented as Figures 9 and 10.

The subsurface soil beneath the Site is interpreted to consist of the following geologic units, from youngest to oldest: artificial (anthropogenic) fill, post-Vashon lacustrine deposits, Vashon glacial till or Vashon age ice-contact deposits, and advance sand deposits and glacial till or drift of either Vashon age or pre-Fraser age. These units are described in detail in the RI Report (SoundEarth 2013a).

Beneath the Property, a distinctive, very hard, silt-rich layer was consistently encountered at elevations between -5 and 5 feet NAVD88 (i.e., 35 to 45 feet bgs) and appeared to act as a confining layer (Figure 9). This geologic interface played an important role in the design of the on-Property remedy since it appears to have significantly reduced vertical contaminant mass distribution; the majority of the contaminant mass is held up by this silt-rich layer.

2.5.3 Site Hydrology

Shallow groundwater was encountered at various depth intervals at the Site, with a series of discontinuous water-bearing zones that extend down to the top of the deep glacial outwash deposits. Groundwater flow within the upper glacial deposits varies in response to the lateral and vertical variability within the heterogeneous glacial sediments underlying the fill materials. The conceptual groundwater model developed for the Site is depicted on Figure 11 and consists of the following four units:

- A shallow water-bearing zone comprised of fill, lacustrine deposits, and weathered and unweathered glacial deposits.
- An intermediate water-bearing zone comprised of dense to very dense heterogeneous glacial deposits (i.e., ice-contact deposits, till, and/or subglacial meltout till) that appear to function as a leaky aquitard.
- A deep outwash aquifer comprised of glacial outwash deposits encountered beneath the intermediate water-bearing interval.
- A lower aquitard comprised of very dense, fine-grained glacial drift deposits underlying the deep outwash aquifer.

The depths and thicknesses of the hydrologic units vary throughout the Site. The shallow water-bearing zone is unconfined and consists of perched groundwater and the local water table. The heterogeneous glacial deposits underlying the shallow water-bearing zone form a leaky aquitard that overlies the confined deep outwash aquifer. The intermediate water-bearing zone consists of the multiple coarser-grained saturated intervals exhibiting semiconfined to confined hydraulic conditions within the finer-grained deposits that comprise the leaky aquitard. As shown on Figures 9 and 10, the physical characteristics and discontinuous nature of the sediments comprising the intermediate water-bearing zone result in some degree of hydraulic connection to the underlying deep outwash aquifer that could allow transport of chlorinated solvents from the intermediate water-bearing zone to the deep water-bearing zone.

Based on data collected to date, groundwater within the shallow water-bearing zone, the intermediate water-bearing intervals, and the deep outwash aquifer flows primarily in a general eastward direction. Water level measurements indicated downward vertical gradients within

the intermediate water-bearing zone, as well as between the intermediate water-bearing zone and the deep outwash aquifer. The vertical gradients between the intermediate water-bearing zone and the deep outwash aquifer decrease from west to east toward Lake Union.

Groundwater levels measured at the Site on January 6, 2014, indicate that nearby construction dewatering, located at the southeast corner of 9th Avenue North and Broad Street (Block 43), resulted in a temporary localized change to the groundwater flow direction in the intermediate water-bearing zone compared to previous sampling conducted prior to the start of dewatering. The construction dewatering was completed by December of 2014. Groundwater levels and the groundwater flow direction from the June 2015 monitoring event indicate that the groundwater levels and flow direction have returned to conditions prior to the start of dewatering.

The following subsections summarize the physical and hydraulic characteristics of the hydrostratigraphic units.

2.5.3.1 Shallow Water-Bearing Zone

The shallow water-bearing zone was encountered at depths of about 10 to 20 feet bgs (about 20 to 30 feet NAVD88). The shallow water-bearing zone often consists of localized perched groundwater conditions that appear to grade into a more extensive local water table aquifer that overlies lacustrine sediments and finer-grained dense glacial materials. In some areas, the shallow water-bearing zone appears to be in direct hydraulic continuity with the upper water-bearing interval(s) of the underlying intermediate water-bearing zone.

Beneath most of the Property and in explorations located east of the Property, the shallow water-bearing zone is present within or at the base of anthropogenic fill soils and/or weathered glacial sediments, and it is underlain by unweathered dense fine-grained glacial deposits or recent lacustrine sediments. Beneath the western portion of the Site, an unweathered layer of dense glacial deposits consisting of ice melt deposits, glacial till, or subglacial meltout till underlies the shallow water-bearing zone. The thickness and hydraulic characteristics of the shallow water-bearing zone vary beneath the Site. Based on the limited saturated thickness and varying depths of saturated soil, the shallow water-bearing zone beneath the western portion of the Site is characteristic of perched groundwater conditions, and is typically less than 10 feet thick. East of the Property, the shallow water-bearing zone appears to form a more continuous local water table aquifer ranging in thickness from about 10 to 20 feet, with an elevation that approaches the Lake Union water surface elevation.

Based on water level measurements obtained from the wells completed in this unit, groundwater flow directions vary over relatively short distances, ranging from a northeast to east direction beneath and adjacent to the Property. This variability in flow direction is likely the result of the varying thickness and physical characteristics of the fill material relative to the underlying weathered and unweathered glacial deposits.

2.5.3.2 Intermediate Water-Bearing Zone

Underlying the shallow water-bearing zone is a relatively thick sequence of very dense heterogeneous glacial deposits with multiple layers of saturated, coarse-grained intervals interbedded with fine-grained, very dense layers of silt and sandy silt. This thick sequence of discontinuous to semicontinuous layers and lenses of dense glacial deposits is identified as the intermediate water-bearing zone (Figure 11). The intermediate water-bearing zone appears to function primarily as a leaky aquitard overlying the deep outwash aquifer.

Sand and silty sand intervals within this sequence of ice melt deposits, glacial till, and/or subglacial meltout till comprise multiple water-bearing intervals within the intermediate water-bearing zone. The water-bearing intervals within this sequence vary in depth, thickness, and lateral extent, and are often overlain and underlain by damp to moist, fine-grained deposits that function as localized aquitards. Groundwater levels for wells completed in the intermediate water-bearing zone indicate confined hydraulic conditions for the coarser-grained water-bearing intervals.

As shown in Figure 11, the intermediate water-bearing zone decreases in thickness from west to east beneath the Site. This water-bearing zone extends from about 25 to 90 feet bgs (-50 to 15 feet NAVD88) beneath and in the vicinity of the Property. Beneath 9th Avenue North, however, the intermediate water-bearing zone appears to be less than about 15 feet thick (Figure 11). The intermediate water-bearing interval appears to decrease in thickness toward the south.

The intermediate water-bearing zone was divided into two depth intervals designated as Intervals A and B based on the depths of several of the monitoring wells installed prior to the RI field work. Interval A corresponds to monitoring wells completed with well screen depths ranging from approximately 35 feet to 45 feet bgs, and Interval B corresponds to monitoring wells completed with deeper well screens to maximum depths of about 80 feet bgs beneath the Property. Data obtained during earlier monitoring events indicate that groundwater flows in a general west to east direction toward Lake Union, with a slight shift to an east to southeast direction in the vicinity of 9th Avenue North. When measurements were taken on March 29, 2013, the average hydraulic gradient for this intermediate water-bearing zone near the Property was 0.024 feet per foot (ft/ft) and decreased to about 0.005 ft/ft in the vicinity of 9th Avenue North. This appears to correspond to the decreasing thickness of the intermediate water-bearing zone in this area of the Site. Contour maps generated during the March 29, 2013, monitoring event can be found in the RI Report (SoundEarth 2013a).

Figure 12 presents the groundwater contour map for wells completed within the intermediate water-bearing zone Interval A based on water level measurements obtained January 6, 2014. Based on this data, groundwater flows in a general west to east direction, shifting to a northwest to southeast direction towards the southeast-adjacent property.

Groundwater levels obtained from wells completed in other depth intervals within the intermediate water-bearing zone indicated a general easterly flow direction. However, the resulting data did not indicate a consistent trend in groundwater flow direction or gradients. This is probably the result of the varying lithologies and hydraulic characteristics of the discontinuous saturated intervals intersected by the wells screened at these greater depth intervals.

Water level data collected to date indicates that seasonal fluctuations range from about 2 to 3 feet in individual wells completed in the intermediate water-bearing zone (Table 1).

Data obtained from slug tests conducted at the Property in 2013 indicate a wide range of hydraulic conductivities for the saturated intervals within the intermediate water-bearing zone. Hydraulic conductivities ranging from about 0.021 to 63 feet per day (ft/day) were estimated from slug tests completed in the intermediate water-bearing zone wells. This range of estimated hydraulic conductivities corresponds to the range of saturated soils (dense sandy silt to sand) intersected by individual well screen intervals. Slug test methods and results are summarized in Appendix D of the RI Report (SoundEarth 2013a).

Based on the results of the slug test analyses and groundwater level measurements collected in March 2013 from the intermediate water-bearing zone the following observations are made:

- The estimated groundwater seepage velocities averages are about 0.61 ft/day in wells completed in silty sand and sand intervals between the Property and the alley located between and 8th and 9th Avenue North.
- The lower hydraulic gradients measured between the alley and 9th Avenue North result in a lower average groundwater seepage velocity of about 0.4 ft/day in this area of the Site.
- The lowest estimated groundwater seepage velocity of 0.002 ft/day was estimated for well W-MW-01 located in the ROW at the southwest corner of the Property, which appears to correspond to the hydraulic characteristics of the sandy silt intervals frequently encountered in the lower 20 to 30 feet of the intermediate water-bearing zone.

Temporary localized increases in seepage velocities, and thereby contaminant velocities, in the intermediate water-bearing zone would likely occur in response to localized increases in the groundwater gradient during construction dewatering activity downgradient of the Property. However, the seepage velocities and contaminant velocities are expected to return to normal conditions (2013 conditions) once construction dewatering is completed.

2.5.3.3 Deep Outwash Aquifer

The deep outwash aquifer is comprised of the glacial outwash deposits underlying the heterogeneous glacial deposits that form the intermediate water-bearing zone. This aquifer is encountered in explorations throughout the South Lake Union/East Queen Anne Hill area and is often referred to as the outwash aquifer. The deep outwash aquifer is a confined aquifer within the vicinity of the Property, with a thickness ranging from about 25 to 45 feet. It extends from about 90 to 125 feet bgs (-50 to -85 feet NAVD88) beneath the Property. As shown in Figure 11, the deep outwash aquifer is encountered at shallower depths (about 55 feet bgs) and appears to increase in thickness in the eastern portion of the Site towards 9th Avenue North. Available subsurface information for other properties located east of 9th Avenue North indicates that this trend continues, with the top of the outwash aquifer encountered at depths ranging from about 40 to 50 feet bgs. Groundwater elevation data collected prior to January 6, 2014, indicated that groundwater flow is in a general east to southeast direction, with a relatively low average hydraulic gradient of about 0.003 ft/ft. Previously collected data indicate seasonal water level fluctuations in the aquifer ranging from about 1.5 to 2.5 feet.

Figure 14 presents the groundwater contour map for the deep outwash aquifer based on water level measurements obtained January 6, 2014. Groundwater flow at that time was in a general east to southeast direction, and influenced by the construction dewatering. To the south of the Property, groundwater flows in a west to east direction toward the southeast-adjacent property. Toward the northeast and the south of the Property the hydraulic gradient is relatively low, at an average of 0.01 ft/ft. The hydraulic gradient increased towards the east-adjointing property and the dewatering area to an average of 0.03 ft/ft.

In 2015, groundwater measurements were only collected from deep monitoring wells MW103, MW105, and MW113 and a complete groundwater contour map was not created because of the

limited data. Additional time and monitoring is necessary to determine if the groundwater hydraulic in the deep water-bearing zone has reached equilibrium.

The hydraulic conductivity of the deep outwash aquifer is estimated to range from about 4 to 54 ft/day based on slug test data obtained in March 2013 from monitoring wells MW104, MW105, and MW113. Groundwater seepage velocities were calculated using the groundwater level measurements collected at the same time as the slug tests (March 2013). For the deep outwash aquifer, the average estimated seepage velocities are about 0.5 ft/day.

2.5.3.4 Lower Aquitard

Older glacial drift and/or glacial till sediments underlying the deep outwash aquifer were encountered in several of the deeper monitoring well borings. These older glacial sediments are comprised of very dense silt and silty sand, and appear to function as an effective aquitard beneath the deep outwash aquifer. The thickness of the lower aquitard is unknown, although samples obtained from the boring for well MW101 indicate that the aquitard is at least 25 feet thick beneath the Property.

2.5.3.5 Hydraulic Connection to Lake Union

March 2013, water levels measured at the Hiram M. Chittenden Locks ranged from 16.75 to 18.75 feet in elevation above mean sea level (NAVD88) and are monitored by the Army Corps of Engineers Reservoir Control Center (US Army Corps 2014), referenced as the Lake Washington gauge by the US Army Corps of Engineers. Based on the March 2013 groundwater elevations the shallow water-bearing zone elevations graded from 35.31 feet in monitoring well R-MW5 to 16.22 feet in monitoring well MW105, approximately 350 feet away from Lake Union. The intermediate water-bearing zone elevations ranged from 25.54 feet in monitoring well MW107 to 16.71 feet in monitoring well MW116, approximately 340 feet away from Lake Union. The deep water-bearing zone elevations graded from 16.90 feet in monitoring well MW104 to 15.99 feet in monitoring well MW113, approximately 390 feet away from Lake Union. Groundwater in the three water-bearing zones comes close to equilibrium as they approach Lake Union, potentially making Lake Union a discharge point for the intermediate and deep water-bearing zones. Since the groundwater elevations are less than 1 foot apart and within normal Lake Union water level fluctuations, Lake Union can act as a recharge source or discharge point to the outwash aquifer is indeterminable based on the data available.

Groundwater contours from January 6, 2014, show strong influence from off-site construction dewatering activity at Block 43. This dewatering altered the normal groundwater flow direction from generally eastward to flowing southeast toward the dewatering project area. Transient groundwater hydrologic conditions as a result of dewatering have lowered the depth of groundwater in intermediate and deep water-bearing zones by approximately 5 to 8 feet. However, recent groundwater monitoring data collected in the 2015 indicate that groundwater levels and flow direction have returned to pre-construction dewatering conditions.

3.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Between 1992 and 2012, several environmental investigations were conducted on the Site. A summary of these investigations is attached to this report as Appendix A, while a more detailed discussion is provided in the RI Report (SoundEarth 2013a). Sample locations are presented in plan view on Figure 8. Soil and groundwater analytical results are presented in plan and cross-sectional views on Figures 9 and 10 and Figures 15 through 20, and in Tables 2 through 14. For evaluation purposes, those concentrations

that exceed the current MTCA Method A or Method B cleanup levels for soil and groundwater are presented in bold red font in the tables. The remainder of this report includes references to cleanup levels; unless otherwise specified, these refer to the 2001 MTCA Method A or 2015 MTCA Method B Cleanup Levels for Unrestricted Land Use for soil and groundwater.

4.0 REMEDIAL INVESTIGATION

The RI at the Site was conducted in July, August, and December 2012; February, March, April, and December 2013; and January 2014. The purpose of the RI was to gather sufficient data on the nature and extent of contamination at the Site in the media of concern to develop remedial alternative. A summary the RI is presented below.

4.1 SOIL BORING ADVANCEMENT AND SAMPLING

The drilling and well installation activities conducted as part of this RI were performed in July 10 through August 15, 2012; December 4 through 18, 2012; February 4, 2013; March 21, 2013; March 18 through April 4, 2013; and December 16, 2013 through January 13, 2014. Drilling activities were conducted under the supervision of a SoundEarth geologist. A total of 42 soil borings were advanced during the investigation (borings B101 through B128 and DB01 through DB14; Figure 8); boring logs are included as Appendix B. In July and August 2012, borings B101 through B106 were advanced by Major Drilling using a sonic probe drilling rig. Borings B107 through B116 were advanced in December 2012; boring B117 was advanced on February 4, 2013; borings B118, B119, and DB01 through DB14 were advanced in March and April 2013; and B120 through B128 were advanced in December 2013 and January 2014 by Cascade Drilling LP using a hollow-stem auger (HSA) drill rig. Concrete at borings B101 through B105, B107, B108, B109, B111, B112, B113, B115, B116, B119, B120 through B128, DB01, and DB04 through DB13 were cored prior to drilling. Because a complex network of subsurface utilities exists beneath the Property, surrounding properties, and ROWs, borings B101, B104, B106, B108, B112, B113, B115, B116, B117, B122, B123, and B126 through B128 were cleared with a vactor truck or by hand before drilling in order to clear each hole of any potential unmarked utilities.

Borings B101 through B106, B113, B122, B123, B124, and B128 were advanced into the regionally identified advance outwash sand aquifer, to maximum depths of approximately 70 to 140 feet bgs. Borings B111, B112, B126, DB05, DB05A, and DB06 through DB10 were advanced to maximum depths between 70 and 90.5 feet bgs. Borings B107 through B110, B114 through B119, B120, B121, B125, B127, DB01 through DB04, and DB11 through DB14 were advanced approximately between 40 and 60.5 feet bgs.

Boring B101 was advanced in the central portion of the Property to further evaluate the vertical extent of PCE contamination in soil and groundwater previously encountered in boring P-07/well W-MW-03 and to assess the validity of the Windward Environmental LLC (Windward) data. Borings DB01 through DB14 were also advanced on the Property to evaluate the extent of PCE contamination previously observed in soil beneath the Property.

Seventeen borings were advanced within ROWs to the east of the Property in order to evaluate the lateral and vertical extent of PCE contamination in soil and groundwater downgradient of the Property; borings B103, B108 through B111, B122, and B126 were advanced in the alleyway between 8th and 9th Avenues North; borings B104, B107, B120, B121, and B127 were advanced within the 8th Avenue North ROW; borings B113, B115, and B116 were advanced in within the 9th Avenue North ROW; and borings B123 and B128 were advanced within the Westlake Avenue North ROW.

Boring B105 was advanced within the Roy Street ROW, southeast of the Property and adjacent to well BB-8, in an effort to assess the vertical extent of PCE impacts in groundwater observed in that well. Borings B106 and B114 were advanced south of the Property within a City of Seattle-owned land parcel and the Broad Street ROW, respectively, in order to evaluate current groundwater conditions in the vicinity of former monitoring well R-MW4.

Borings B102, B112, B124, and 125 were advanced within the Valley Street and Dexter Avenue North ROWs in an effort to evaluate whether PCE contamination extended off the Property to the north and/or west.

Boring B117 was advanced within the Dexter Avenue North ROW to the southwest of the Property in order to evaluate PCE impacts in groundwater inferred as hydraulically upgradient from the Property.

Conductor casing was installed to 40 and 80 feet bgs in boring B102 and to 50 feet bgs in boring B111 to provide a barrier between water-bearing zones and mitigate downward migration of contamination through the water table. A summary (in numerical order) of the boring/monitoring well IDs, locations, purpose, installation date(s), depths advanced, and well completion details (if applicable) is presented in Table 15.

After the maximum depth was achieved in each sample interval, relatively undisturbed, discrete soil samples were collected from each soil sonic-rig-advanced boring continuously and from each HSA-rig-advanced boring at 5-foot intervals throughout the maximum depth explored. Soil samples were collected from the center of the core sample to avoid cross-contamination. The soil was classified using the Unified Soil Classification System. Soil characteristics, including moisture content, relative density, texture, and color, were recorded on boring logs, provided in Appendix B. The depths at which changes in soil lithology were observed and where groundwater was first encountered are also included on the boring logs. Selected portions of recovered soil core samples were placed in a plastic bag so the presence or absence of volatile organic compounds (VOCs) could be quantified using a photoionization detector (PID). Soil samples were selected for analysis based on previous data, field indications of potential contamination including visual and olfactory notations, PID readings, and the location of the sample proximate to the soil-groundwater interface.

After collection, soil samples were labeled with a unique sample ID, placed on ice in a cooler, and delivered to Friedman & Bruya, Inc. of Seattle, Washington, under standard chain-of-custody protocols for laboratory analysis. Select soil samples were submitted for laboratory analysis of VOCs, including PCE, TCE, vinyl chloride, 1,2-dichloroethane (EDC), 1,2-dibromoethane (EDB), cis-1,2-DCE, trans-1,2-dichloroethylene (trans-1,2-DCE) and 1,3,5- and 1,2,4-trimethylbenzene by U.S. Environmental Protection Agency (EPA) Method 8260C. Soil samples collected from DB02, DB14, and B107 were also submitted for analysis of GRPH by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260C. Results from the soil sampling events are present in Section 4.6 of the CAP.

4.2 RECONNAISSANCE GROUNDWATER SAMPLES

Reconnaissance groundwater samples were collected from borings B101 through B106, B115, B116, B122, B124, B126, DB01 through DB05, DB05A, DB10, DB13, and DB14 during drilling activities using a temporary screen and a peristaltic or bladder pump at various depths, as indicated in Table 2. The reconnaissance groundwater samples were submitted for laboratory analysis of VOCs, including PCE, TCE, vinyl chloride, EDC, EDB, cis- and trans-1,2-DCE, and 1,3,5- and 1,2,4-trimethylbenzene by EPA

Method 8260C. The reconnaissance groundwater samples collected from borings B104 and DB14 were also analyzed for GRPH by Method NWTPH-Gx and/or BTEX by EPA Method 8260C at depths of 60 and 80 feet bgs. Additional reconnaissance groundwater samples were collected from borings B102, B103, and B105 at each of the depths sampled and were field-filtered through a 0.45-micron filter prior to analysis because the groundwater samples exhibited high turbidity. A field duplicate sample was collected from boring B101 at 80 feet bgs for quality assurance/quality control (QA/QC) purposes.

Reconnaissance groundwater samples are useful for screening and site characterization, although concentrations are typically considered an estimate since the collection process can produce a measurable difference from the samples' true value. The most common causes of sample bias are as follows:

- **Turbidity.** Turbidity can cause bias as a result of the adsorption of chemicals onto, or the release of chemicals from, the surface of particles in the sample (EPA 2005).
- **Disturbance.** Disturbances such as pressure decreases, temperature, exposure to atmospheric conditions, desorption from sampler materials, and agitation can all contribute to sample bias (EPA 2005).
- **Sampling Interval.** The potential for contaminated groundwater to travel between sampling intervals exists, potentially biasing the results at the point of interest.

In addition, the relatively short time frame associated with the collection of reconnaissance groundwater samples may be insufficient for adequate well development and equilibration with the surrounding formation. Results from the reconnaissance groundwater sampling events are present in Section 4.6 of the CAP.

4.3 MONITORING WELL INSTALLATION

Borings B101 through B128 were completed as monitoring wells MW101 through MW128, respectively. Each monitoring well was constructed of 2-inch-diameter blank PVC casing, flush-threaded to approximately 10 feet of 0.010-inch slotted well screen. The bottom of each of the wells was fitted with a threaded PVC bottom cap, and the top of each well was fitted with a locking compression-fit well cap. The annulus of the monitoring wells was filled with #10/20 silica sand to a minimum height of 1 foot above the top of the screened interval. A bentonite seal with a minimum thickness of 1 foot was installed above the sand pack. The wells were completed at the surface with a flush-mounted, traffic-rated well box set in concrete. The well completion details are presented in Table 15 and in the boring logs, which are provided in Appendix B.

Three water-bearing zones were identified during drilling activities: a shallow water-bearing zone comprised of fill and encountered at depths of 10 to 20 feet bgs; a relatively thick intermediate water-bearing zone comprised of dense to very dense heterogeneous glacial sediments, encountered between 25 and 80 feet bgs, and divided into "A" and "B" zones; and a deep outwash aquifer comprised of glacial advance outwash deposits encountered beneath the intermediate water-bearing zone.

Monitoring wells MW101 through MW106, MW122, MW123, MW124, and MW128 were screened in the deep water-bearing zone to maximum depths between 70 and 140 feet bgs. Monitoring wells MW107 through MW110, MW114 through MW120, and MW127 were screened in the intermediate "A" water-bearing zone. Monitoring wells MW111, MW112, and MW126 were screened in the intermediate "B" water-bearing zone.

4.4 GROUNDWATER MONITORING EVENTS

SoundEarth collected groundwater samples from monitoring wells at the Property and off-Property between 2012 and 2015. Results from the groundwater sampling events are present in Section 4.6 of the CAP. The monitoring wells were sampled using a combination of peristaltic and bladder pumps. Groundwater measurements were collected on September 4 and December 21, 2012, from monitoring wells G-MW1, G-MW2, G-MW3, R-MW1, R-MW2, R-MW3, R-MW6, W-MW-01, W-MW-02, W-MW-03, W-MW-04, BB-8, MW-9, and M101 through MW116. Groundwater measurements were collected from all of the monitoring wells mentioned, as well as monitoring wells MW117, MW118, and MW119, on March 29, 2013. Groundwater measurements were again collected on January 6, 2014, and were collected from monitoring wells R-MW2, R-MW3, R-MW5, R-MW6, W-MW-01, W-MW-02, BB-8, MW-9, SCL-MW105-N, SCL-MW01, SCL-MW105-5, and M102 through MW127. Monitoring wells G-MW1 through G-MW3, R-MW1, W-MW-03, W-MW-04, and MW101 were decommissioned in June 2013 to allow for implementation of the electrical resistance heating (ERH)/soil vapor extraction (SVE) treatment system. The most recent groundwater measurements were collected on June 16, 2015, and were collected from on-Property monitoring wells F9, F13, J5, J15, K8, and M15, and off-Property monitoring wells W-MW-01, W-MW-02, MW103, MW105, MW107 through MW113, MW115, MW116, MW119, MW120, and BB-8. Groundwater measurements were collected relative to the top of well casings to an accuracy of 0.01 feet using an electronic water meter.

Groundwater samples were collected from each monitoring well using low-flow sampling techniques, in accordance with EPA's *Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (1996) and SoundEarth's *Standard Operating Procedures-007: Groundwater Sampling*, at least 24 hours following well development. Purging and sampling of monitoring wells MW102, MW104, MW106, MW112, and MW124 were performed using a bladder pump and dedicated polyethylene tubing. Purging and sampling of monitoring wells W-MW-01, through W-MW-04, R-MW1, R-MW2, R-MW3, R-MW5, R-MW6, G-MW1, G-MW2, G-MW3, BB-8, MW-9, MW101, MW103, MW105, MW107 through MW111, MW113 through MW123, and MW125 through MW128 were performed using a peristaltic pump with dedicated polyethylene tubing. During purging, water quality parameters that were monitored and recorded included temperature, pH, specific conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential (ORP). Each well was purged until, at a minimum, pH, specific conductivity, and turbidity or dissolved oxygen stabilized. Samples were placed directly into clean, laboratory-prepared containers.

After collection, groundwater samples were labeled with a unique sample ID, placed on ice in a cooler, and delivered to Friedman & Bruya, Inc. under standard chain-of-custody protocols for laboratory analysis. Groundwater samples were submitted for laboratory analysis of VOCs, including PCE, TCE, cis- and trans-1,2-DCE, and vinyl chloride, by EPA Method 8260C. Select groundwater samples were also submitted for analysis of EDC, EDB, and 1,3,5- and 1,2,4-trimethylbenzene, by EPA Method 8260C; GRPH by Method NWTPH-Gx; DRPH and ORPH by Method NWTPH-Dx; BTEX by EPA Method 8260C; alkalinity by Standard Method (SM) Method 2320B; nitrate, sulfate, and chloride by EPA Method 300.0; iron and total manganese by EPA Method 200.7; ferrous iron by SM 3500FeD; and methane, ethene, and ethane by Method RSK-175. Field duplicate samples were collected for QA/QC purposes from monitoring wells MW103 on September 5, 2012; G-MW1 on September 6, 2012; MW107 on December 21, 2012; MW103 on December 18, 2013; and MW121 on December 26, 2013.

4.5 SOIL GAS SAMPLING

On March 11, 2013, SoundEarth performed a vapor intrusion investigation adjacent to the 800 Roy Street parcel. The purpose of the investigation was to evaluate whether vapor intrusion from PCE-contaminated groundwater beneath the 800 Roy Street parcel has adversely impacted indoor ambient air quality in the basement of the 800 Roy Street building. Soil gas samples were collected from permanent soil gas monitoring points SV01, SV02, and SV03, using individually certified, 6-liter SUMMA canisters. The soil gas monitoring points were advanced in the sidewalk on the west side of the 800 Roy Street parcel by ESN Northwest using a push probe rig to a maximum depth of 13 feet bgs. The locations and results for the soil gas monitoring points are shown on Figures 8 and 21.

Soil gas samples were collected in the vadose zone just above the groundwater capillary fringe at depths ranging from 11.75 and 12.75 feet bgs. The sample depths were selected to emulate a sub-slab soil gas sample collected in accordance with Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* (2009). The soil gas monitoring points were constructed of 6-inch-long, stainless-steel mesh implants from an approximate depth of 12.75 feet bgs and were connected to a riser composed of 0.5-inch-diameter, Teflon-lined polyethylene tubing. The soil gas monitoring points were fitted with a flush-mounted monument at ground surface.

A minimum of three "dead" volumes were purged from the soil gas monitoring points prior to sample collection. Purging and sampling was conducted through a laboratory-certified flow controller set to a flow rate of 167 milliliters per minute. The sample collection time was approximately 46 minutes for SV01 and SV02 and 47 minutes for SV03. The samples were analyzed for the presence of PCE, TCE, cis- and trans-1,2-DCE, and vinyl chloride by EPA Modified Method TO-15 SIM. In addition, helium was used to assess the potential for leaks in the sample train and probe annulus during sampling of the soil gas. Helium was introduced to the sample train and probe annulus by positioning an enclosure over the probe and sampling train. The enclosure was filled with a measured amount of helium, and the concentration of helium was then measured in soil gas samples subsequently drawn from the probe.

4.6 REMEDIAL INVESTIGATION RESULTS

Analytical results for soil, groundwater, and soil gas samples collected during the RI are presented on Figures 15 through 19 and 21 through 35 and in Tables 2 through 7 and 16. Laboratory analytical reports are included as Appendix C.

4.6.1 Soil Results

The following is a summary of the soil analytical data generated during the RI conducted by SoundEarth in July 2012 through January 2014:

- Fill was encountered from ground surface to maximum depths between 10 and 18 feet bgs in on-Property boring B101 and off-Property borings B102 and B103. Very dense, glacially derived sediments predominantly composed of silty sands and sandy silts, with sections of gravel containing varying amounts of silts and sands, were encountered below the Site (Figures 9 and 10). Wet sand with some silt and gravel was encountered at depths below 80 feet bgs and interpreted as glacial outwash deposits.
- Soil samples collected from on-Property borings B101, DB02, DB03, and DB05 through DB13, and off-Property borings B103 through B107, B109 through B111, and B114 contained concentrations of PCE and TCE exceeding the applicable

cleanup levels. PCE and TCE concentrations that exceeded their respective cleanup levels were detected in soil collected from between 5 and 70 feet bgs. PCE concentrations exceeding the cleanup level were also detected in the soil samples collected from greater depths in B101 at 81 feet bgs and boring B104 at a depth of 80 feet bgs. The PCE concentrations detected in the soil samples collected from borings B101, B107, DB05, DB06, and DB07 at depths of between 30 and 40 feet bgs; boring DB10 at depths between 20 and 50 feet bgs; boring DB11 at a depth of 45 feet bgs; and boring DB12 at a depth of 20 feet bgs exceeded Washington State's Dangerous Waste criteria. A concentration of PCE at the cleanup level was detected in the soil sample collected from boring DB14 at a depth of 40 feet bgs.

- GRPH and/or benzene concentrations exceeding the cleanup level were detected in the soil samples collected from boring DB14 at depths of 10 and 20 feet bgs.
- Soil samples collected from borings B102, B108, B112, B113, B115 through B128, and DB01 did not exhibit concentrations of PCE or TCE exceeding the applicable cleanup levels and/or laboratory reporting limits. TCE was not detected in any of the soil samples collected from DB04 at concentrations above the laboratory reporting limits.
- None of the soil samples collected from the borings advanced during the RI contained concentrations of cis- or trans-1,2-DCE, 1,1-dichloroethylene (1,1-DCE), vinyl chloride, or other VOCs above their respective cleanup levels.
- GRPH and BTEX concentrations remained below laboratory reporting limit and/or the applicable cleanup levels in soil samples collected from borings B107, B120, B121, B124, B125, and DB02.

4.6.2 Reconnaissance Groundwater Results

The following is a summary of the reconnaissance groundwater analytical data generated during the RI:

- PCE concentrations exceeding the cleanup level were detected in reconnaissance groundwater samples collected from on-Property boring B101 at 80 feet bgs; borings DB02 through DB10, DB12, DB13, and DB14 at depths between 10 and 80 feet bgs; off-Property borings B103 at 40 and 80 feet bgs; B104 at 60, 80, and 100 feet bgs; and B106 at 35, 50, and 90 feet bgs. A concentration of PCE at the cleanup level was also detected in the reconnaissance groundwater sample collected from off-Property boring B102 at 30 feet bgs.
- Concentrations of TCE exceeding the cleanup level were detected in reconnaissance groundwater samples collected from on-Property borings B101 at 80 feet bgs; DB02, DB03, DB05, DB05A, DB08 through DB10, and DB12 through DB14 at depths between 10 and 70 feet bgs; off-Property borings B103 at 40 and 80 feet bgs; B104 at 60, 80, and 100 feet bgs; and B106 at 50 feet bgs.
- Cis-1,2-DCE concentrations exceeding the cleanup level were detected in reconnaissance groundwater samples collected from on-Property borings B101 and DB03, DB05A, DB08, DB09, DB12, DB13, and DB14 at depths between 10 and 80 feet bgs; off-Property borings B103 at 40 and 80 feet bgs; B104 at 60 and 80 feet bgs; B106 at 50 feet bgs; and B122 at 40 feet bgs.

- Concentrations of vinyl chloride exceeding the cleanup level were detected in reconnaissance groundwater samples collected from on-Property boring B101 at 80 feet bgs and borings DB02, DB03, DB05A, DB08, DB09, DB13, and DB14 at depths between 35 and 70 feet bgs; off-Property boring B102 at 30 feet bgs; B103 at 40 and 80 feet bgs; B104 at 60, 80, and 100 feet bgs; B106 at 35, 50, and 90 feet bgs; and B122 at 40 and 85 feet bgs. A concentration of vinyl chloride at the cleanup level was also detected in the reconnaissance groundwater sample collected from boring B102 at a depth of 50 feet bgs.
- Concentrations of detectable VOCs in groundwater samples collected from borings B102 and B103 were greatly reduced in the filtered samples when compared to the non-filtered samples.
- A methylene chloride concentration was detected in reconnaissance groundwater sample collected from boring B104 at depths of 80 feet bgs; however, the resultant concentrations were flagged by the laboratory because methylene chloride was also detected in the method blank. Therefore, the detected concentration is considered a result of laboratory contamination.
- Trans-1,2,-DCE and 1,1-DCE were not detected at concentrations exceeding their respective cleanup levels in any of the reconnaissance groundwater samples collected during the RI.
- Reconnaissance groundwater samples collected from boring B104 did not contain concentrations of BTEX constituents exceeding their respective cleanup levels.
- Reconnaissance groundwater samples collected from boring B122 contained concentrations of benzene exceeding the cleanup level at 25 and 40 feet bgs.
- Reconnaissance groundwater samples collected from borings B105 and DB01 did not contain concentrations of VOCs above their respective laboratory reporting limits.
- Because PCE concentrations were so high in the reconnaissance groundwater samples collected from borings DB07, DB10, and DB12, the samples required dilution, which elevated the laboratory detection limits of TCE, cis-1,2-DCE, trans-1,2,-DCE, and vinyl chloride to above their respective cleanup levels. Therefore, it is not possible to determine if the concentrations of some of these VOCs exceeded the cleanup levels in the samples collected from DB07, DB10, and DB12.

4.6.3 Remedial Investigation Groundwater Results

The following is a summary of the groundwater analytical results generated during the RI.

Shallow Water-Bearing Zone Wells: G-MW2, R-MW1, R-MW2, R-MW3, R-MW5, R-MW6, MW-9, MW121, and MW125.

- Concentrations of PCE exceeding the applicable cleanup level were detected in the groundwater samples collected from monitoring wells G-MW2, R-MW1, and R-MW3.
- Concentrations of TCE and cis-1,2-DCE exceeding their respective cleanup level were detected in groundwater sample collected from monitoring well G-MW2.

- Concentrations of vinyl chloride exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells R-MW1, MW-9, and MW121.
- Concentrations of BTEX, trans-1,2-DCE, 1,1-DCE, and EDC remained below their respective laboratory reporting limits and/or cleanup levels in all of the shallow wells sampled during the RI.
- Concentrations of GRPH, ORPH, and DRPH remained below their respective laboratory reporting limits and/or cleanup levels in monitoring wells MW121 and MW125.
- Groundwater samples collected from monitoring wells R-MW2, R-MW5, and R-MW6 did not contain detectable concentrations of VOCs.

Intermediate Water-Bearing Zone (Interval A) Wells: G-MW1, G-MW3, BB-8, MW107 through MW110, MW114 through MW120, and MW127.

- Concentrations of PCE exceeding the applicable cleanup level were detected in the groundwater samples collected from monitoring wells G-MW1, G-MW3, BB-8, MW107, MW109, MW110, MW114, MW115, and MW116.
- Concentrations of TCE exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells G-MW1, G-MW3, BB-8, MW107, MW109, MW110, and MW114.
- Concentrations of cis-1,2-DCE exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells G-MW1, G-MW3, MW107, MW108, MW109, MW110, MW114, MW115, MW120, and BB-8.
- Concentrations of vinyl chloride exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells G-MW1, G-MW3, MW107 through MW110, MW114, MW115, MW119, MW120, and MW127.
- A concentration of GRPH exceeding the applicable cleanup level was detected in the groundwater sample collected from monitoring well MW107, located to the east of the Property within the 8th Avenue North ROW, although the concentration was flagged by the laboratory because the chromatograph pattern was not indicative of gasoline. Concentrations of DRPH and ORPH were below their applicable cleanup levels in the groundwater sample.
- Concentrations of PCE and TCE were below the laboratory reporting limit and/or cleanup level in groundwater samples collected from monitoring well MW108.
- The groundwater sample collected from monitoring well MW117, located within the Dexter Avenue North ROW to the south of the Property, did not contain detectable concentrations of VOCs.
- Groundwater samples collected from monitoring wells G-MW1, G-MW3, BB-8, and MW107, which were selected for additional BTEX analysis, did not contain concentrations of BTEX constituents above their respective cleanup levels.

- Trans-1,2-DCE, 1,1-DCE, and EDC were not detected at concentrations exceeding their respective cleanup levels in any of the groundwater samples collected from the Intermediate “A” wells sampled during the RI.

Intermediate Water-Bearing Zone (Interval B) Wells: W-MW01 through W-MW04, MW111, MW112, and MW126.

- Concentrations of PCE exceeding the applicable cleanup level were detected in the groundwater samples collected from monitoring wells W-MW-02, W-MW-03, W-MW-04, and MW111.
- Concentrations of TCE exceeding the applicable cleanup level were detected in the groundwater samples collected from monitoring wells W-MW02, W-MW04, and MW111.
- Concentrations of cis-1,2-DCE exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells W-MW-02, W-MW-03, W-MW-04, and MW111.
- Concentrations of vinyl chloride exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells W-MW-01 through W-MW-04 and MW111.
- The groundwater sample collected from monitoring well MW112, located in the Dexter Avenue North ROW to the west of the Property, did not contain detectable concentrations of VOCs.
- The groundwater sample collected from monitoring well MW126, located in the alley between 8th and 9th Avenue North, did not contain detectable concentrations of VOCs.
- Concentrations of PCE, TCE, and cis-1,2-DCE were below the laboratory reporting limits and/or respective cleanup levels in the groundwater sample collected from monitoring well W-MW-01.
- Groundwater samples collected from monitoring wells W-MW-01 through W-MW-04, which were selected for additional BTEX analysis, did not contain concentrations of BTEX constituents above their respective cleanup levels.
- Trans-1,2-DCE, 1,1-DCE, and EDC were not detected at concentrations exceeding their respective cleanup levels in any of the groundwater samples collected from the Intermediate “B” wells sampled during the RI.
- Groundwater samples collected from monitoring wells W-MW-01 through W-MW-04, after redevelopment, contained significantly lower concentrations of VOCs compared to those observed by Windward, suggesting their initial data may have been biased high due to drilling and sampling methodology.

Deep Water-Bearing Zone Wells: MW101 through MW106, MW113, MW122 through MW124, and MW128.

- A concentration of PCE exceeding the applicable cleanup level was detected in the groundwater sample collected from monitoring wells MW103.

- Concentrations of TCE and vinyl chloride exceeding their respective cleanup level were detected in groundwater samples collected from monitoring wells MW103 and MW113.
- Concentrations of cis-1,2-DCE exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells MW103, MW113, and MW128.
- Concentrations of vinyl chloride exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells MW103, MW105, MW113, and MW128.
- Groundwater samples collected from on-Property monitoring well MW101 and monitoring wells MW102, MW104, and MW106 located to the north, east and south, of the Property, respectively, did not contain detectable concentrations of VOCs.
- Monitoring wells MW101 through MW106, which were selected for additional BTEX analysis, did not contain concentrations of BTEX constituents above their respective cleanup levels.
- Concentrations of PCE, TCE, and cis-1,2-DCE remained below their respective laboratory reporting limits and cleanup levels in the groundwater samples collected from monitoring wells MW105, and MW122 through MW124. PCE also remained below the cleanup level in the groundwater sample collected from monitoring well MW113.

4.6.4 Soil Gas Results

PCE was detected in all three soil gas samples at concentrations ranging from 1.5 to 4.6 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Vinyl chloride and cis 1,2-DCE were detected in soil gas sample SV01 at concentrations of $0.71 \mu\text{g}/\text{m}^3$ and $0.31 \mu\text{g}/\text{m}^3$, respectively. TCE was only detected in soil gas sample SV03 at a concentration of $0.39 \mu\text{g}/\text{m}^3$. Concentrations of all remaining analytes in the soil gas samples were not detected above laboratory reporting limits.

In accordance with Ecology's vapor intrusion guidance, concentrations of PCE, TCE, and vinyl chloride in the soil gas samples were compared to screening levels in soil gas that are protective of indoor air quality. Soil gas screening levels were calculated using their respective MTCA Method B indoor air cleanup levels for carcinogenicity, obtained from Ecology's cleanup levels and risk calculations (CLARC) database and divided by a vapor attenuation factor of 0.1. Detectable concentrations of PCE, TCE, and vinyl chloride in soil gas samples collected during the RI were all less than their calculated screening levels of 96, 3.7, and $2.8 \mu\text{g}/\text{m}^3$, respectively, which would be protective of indoor air. A screening level protective of indoor air was not calculated for cis-1,2-DCE because the CLARC database has not provided an indoor air cleanup level since toxicity values were updated in 2010. The previous MTCA Method B indoor air cleanup level for cis-1,2-DCE for non-carcinogenicity was $160 \mu\text{g}/\text{m}^3$, and the detected value in SV01 is below that level.

5.0 CONCEPTUAL SITE MODEL SUMMARY

This section provides a conceptual understanding of the contaminant distribution beneath the Site derived from the results of historical research and the subsurface investigations. Included is a discussion

of the confirmed and suspected source areas, the COCs, media of concern, fate and transport, and the potential exposure pathways. The RI Report (SoundEarth 2013a) provides a more detailed discussion of the conceptual site model (CSM). The CSM serves as the basis for developing technically feasible cleanup action alternatives and selecting a cleanup action for the Property and Site. The CSM is considered to be dynamic and may be refined throughout the cleanup action process as additional information becomes available.

5.1 CONFIRMED AND SUSPECTED SOURCE AREAS

5.1.1 Chlorinated Solvents

The results of the investigations conducted at the Property suggest that the solvent impacts confirmed in soil and groundwater beneath the Site are the result of a release from the laundry and dry cleaning facility that operated on the Property from 1926 through 1995. Dry cleaning operations were conducted on the Property as early as 1966; by 1962, PCE was the primary dry cleaning agent in the United States. At the time, 90 percent of the PCE consumed in the United States was used for dry cleaning (Chemical Engineering News 1963). Considering the scale of the laundry and dry cleaning operations conducted at the Property, it is reasonable to expect that the use of dry cleaning solvents at the Property reflected that of the rest of the country.

Historical building plans indicated that the dry cleaning machines were installed on the first floor of Building A, with piping leading from the dry cleaning machines to the sumps in the boiler room of Building A. Anecdotal evidence suggests that dry cleaning operations were primarily conducted on the first floor of Building A (Figure 6). Consistent with this information, the highest concentrations of chlorinated solvents are located beneath the western portion of the Property, in the vicinity of the former Sump Nos. 2 and 4 and the associated sewer lines beneath former Building A. The results of the 2011 and 2012 preferential pathway investigation indicated that dry cleaning effluent may have flowed into Sump No. 4, which likely connected through the southern sewer line. Although it is not likely that Sump No. 4 leaked significantly, the joints within the sewer line may have contributed to a release of PCE-contaminated effluent into the subsurface beneath the Property. The results of laboratory analysis on sludge collected from cleanouts C.O. No. 1 and C.O. No. 2 and Sump No. 5, soil collected from test pit EX01 and borings B-07 and B101, and soil collected from boring B107 suggest that a portion of the PCE-contaminated effluent was conveyed through the northern, southern, and eastern sewer lines as well. The highest concentrations of PCE in groundwater beneath the Site are located in the northeastern portion of the Property. The distribution of solvents in soil and groundwater suggest that the primary source of the release was located in this area, although additional, smaller releases may have contributed to shallow solvent contamination elsewhere on the Property, including in the vicinity of the former water/sludge treatment facility that operated in Building C between 1986 and 1995. No ongoing chlorinated solvent releases to soil exist at the Site because dry cleaning operations ceased in the 1990s.

Using the groundwater analytical data collected from the 2013 to 2014 remedial investigation the horizontal and vertical extents of PCE and associated degradation compounds were evaluated for the intermediate water-bearing zone and the deep outwash aquifer. A series of isoconcentration maps and cross sections were developed to depict the range and extent of these groundwater contaminants. Concentrations of PCE, TCE, cis-1,2-DCE and vinyl chloride in the intermediate water-bearing zone are depicted in plan view on Figures 22 through 25. Concentrations of TCE and vinyl chloride detected in the deep outwash aquifer are shown in plan view on Figures 26 and 27, respectively. Isocontours of PCE, TCE, cis-1,2-DCE, and vinyl

chloride with respect to depth are shown on the series of east-west cross-sections presented as Figures 28 through 31. The 2013/2014 groundwater analytical results for each of the wells are noted on these figures, while the full set of groundwater data is presented in Tables 3 and 6.

As shown in Figures 22 through 31, COCs appear to have migrated in both west to east, and north to south directions from an apparent source or sources in the central portion of the Property. The lateral distribution of chlorinated solvent contamination is consistent with groundwater flow direction and is bound to the north by monitoring wells MW102, MW123, MW124, and MW126; to the west by monitoring wells MW112 and MW117, and to the south by monitoring well MW118.

The eastern extent of the plume appears to end approximately 450 to 500 feet east of the Property (between 9th Avenue North and Westlake Avenue North) based on the relatively low concentrations of vinyl chloride detected in monitoring wells MW113 (0.41 micrograms per liter [$\mu\text{g/L}$]) and MW115 (0.75 $\mu\text{g/L}$). It appears a secondary source is present east of 9th Avenue North based on the dramatic increase of vinyl chloride concentration detected in monitoring well MW128 (250 $\mu\text{g/L}$), located on the corner of Westlake Avenue North and Broad Street (Westlake and Broad Property). Several historical land use practices in this area could have resulted in a release of chlorinated solvents to the subsurface (Figure 7).

The first known use of Westlake and Broad property was as a lumber yard and saw mill from at least 1893 through 1935; the lumber yard's machine shop was located in the northwest corner. In 1935, a fire destroyed the lumber yard buildings, and it was subsequently rebuilt on the eastern portion of the Westlake and Broad property. From 1938 through at least 1954, the Westlake and Broad property was occupied by a creamery, a brewery, and a gas station, in addition to the lumber yard.

The lumber yard was present on at least a portion of the Westlake and Broad property from 1893 through 1988. The creamery and brewery were present on site from 1933 through 1965.

The gas station, located on the northwest portion of the Westlake and Broad property, was listed as McKale's gas station from at least 1942 through 1963. From 1967 through at least 1997, the service station was listed as Auto Service Company, described in city directories as an auto cleaning and polishing company. Auto Service Company is listed on Ecology's Confirmed and Suspected Contaminated Sites list, as well as leaking underground storage tank (LUST) list.

An additional gas and service station was located on the southwest corner of the Westlake and Broad property from at 1965 through 2007, listed as a Unocal/ConocoPhillips/Tosco Service Station. In 1980, it was reported that approximately 80,000 gallons of gasoline had leaked from an underground pipe over the course of some months. The site is listed on Ecology's Voluntary Cleanup Program list, as well as LUST list.

Buildings were removed from the Westlake and Broad property in 2006 through 2007, and the northern half was used as a parking lot from 2010 through 2013.

Auto repairing processes typically involved use of chlorinated solvents as a degreaser; therefore, the use of the northwestern portion of the Westlake and Broad property as an auto repairing and polishing service company for 30 years (1967-1997) is a potential source of groundwater contamination at MW128. However, MW128 will be monitored with respect to the Sitewide plume and incorporated into the time series analyses to support the conclusion that a secondary source is present in this area.

5.1.2 Petroleum Hydrocarbons

Two generations of refueling facilities operated on the northern portion of the Property and four USTs containing heating oil operated in the southwestern portion of the Property. Anecdotal evidence indicates that the circa 1961 UST system located in the northeast corner of the Property leaked petroleum hydrocarbons into the subsurface. The distribution of petroleum hydrocarbons in groundwater in the northeast portion of the Property suggests that a release from the circa 1961 UST system has impacted groundwater. It is unlikely that ongoing petroleum hydrocarbon releases to soil beneath the Property exist since both fuel UST systems were reportedly removed between 1966 and 1985 and the heating oil USTs were removed in 2013; however, petroleum-contaminated soil (PCS) may continue to act as a secondary source to soil vapor and groundwater.

Concentrations of petroleum hydrocarbons exceed their respective cleanup levels in soil and groundwater samples collected on the northern portion of the Property and within the 8th Avenue North ROW. The petroleum contamination is attributed to the historical operation of refueling facilities on the Property and on the east-adjointing properties. The petroleum hydrocarbon contamination appears vertically limited to the shallow and intermediate water-bearing zones. The lateral distribution of petroleum contamination in soil and groundwater is depicted on Figures 15 and 16, respectively, and is bound to the west by monitoring well W-MW-04, to the north by monitoring wells MW125 and MW-9, to the east by monitoring well MW121, and to the south by monitoring well W-MW-02.

5.2 CHEMICALS OF CONCERN

Based on the findings of the RI, the primary COCs at the Site are PCE and TCE in soil and groundwater. Secondary COCs identified for the Site include metals, polycyclic aromatic hydrocarbons (PAHs), GRPH, DRPH, ORPH, BTEX, cis-1,2-DCE, and vinyl chloride.

5.3 MEDIA OF CONCERN

Soil and groundwater have been confirmed as affected media at the Site. Soil gas and indoor air have been retained as potential media of concern based on the elevated concentrations of PCE in soil and groundwater.

5.4 CONTAMINANT FATE AND TRANSPORT OF CHLORINATED SOLVENTS

This section includes a discussion of the transport mechanisms and environmental fate of chlorinated solvents in the subsurface.

Chlorinated solvents present beneath the Site include PCE, TCE, cis-1,2-DCE, and vinyl chloride, which are confirmed to be present at levels requiring further action under MTCA in both soil and groundwater. The PCE-related compounds are likely present as a result of chemical or biological degradation of PCE. Because both PCE and the degradation products share similar environmental fate and transport characteristics and are present in the same media, PCE is the focus of the contaminant fate and transport discussion.

The RI activities conducted at the Site have demonstrated the following:

- A shallow, perched water-bearing zone is located beneath the Site at depths between 20 and 30 feet NAVD88 (i.e., 10 and 20 feet bgs), consistent with the depth and thickness of the fill material underlying the area.

- An intermediate water-bearing zone, comprised of Intervals A and B, overlies and encompasses a hard silt layer, above which the majority of the contaminant mass is retained. The silt layer has been observed at elevations between -5 and 5 feet NAVD88 (i.e., 35 to 45 feet bgs).
- A deep water-bearing zone was encountered at depths of 90 to 125 feet bgs (-50 to -85 feet NAVD88) in the general vicinity of the Property. This zone encompasses a regional confined aquifer comprised of glacial outwash deposits.
- Concentrations of PCE are highest in groundwater samples collected in the west-central portion of the Property in the vicinity of B-9, GMW-2, G-MW3, DB05A, DB10, and DB12; PCE concentrations in groundwater collected from each of these borings/wells exceeded 100,000 µg/L during at least one sampling event. The highest concentration of PCE was 230,000 µg/L in groundwater collected from DB05A in March 2013. Groundwater exhibiting these concentrations was encountered between 10 and 45 feet bgs.
- Groundwater beneath the Site generally flows east toward Lake Union; the contaminant distribution in groundwater is consistent with the measured flow direction. The highest concentrations of chlorinated solvents have been detected within the shallow and intermediate water-bearing zones, with relatively low levels detected in the deep water-bearing zone. In most cases, supplemental sampling events indicate that the concentrations detected in the deeper water-bearing zone may have been a result of a high data bias due to elevated turbidity in the newly-installed wells.
- PCE in groundwater extends from the Property downgradient to 9th Avenue North.
- Concentrations of PCE in borings B-9 and G-MW1, which are located adjacent to former Building A (i.e., the west-central portion of the Property), exceeded the land ban criteria of 60 milligrams per kilogram (mg/kg) at depths between 4 and 20 feet bgs (Figure 17) before ERH was implemented. A comparatively larger volume of soil exceeded the dangerous waste threshold of 14 mg/kg before ERH; however, concentrations of chlorinated solvents in soil generally diminish outward and downgradient of the primary source area and the distribution of the solvents in soil generally follow that of groundwater.
- PCE has migrated vertically through soil to depths of up to 80 feet bgs in the areas explored (Figures 9 and 10). PCE contamination in soil extends south and east beyond the Property boundaries and beneath the adjoining ROWs and portions of the south- and east-adjoining properties.

5.4.1 Transport Mechanisms Affecting Distribution of Chlorinated Solvents in the Subsurface

The lateral, crossgradient, and upgradient distribution of PCE concentrations in the vadose zone likely are a result of vapor-phase transport via diffusion from source areas and transport over time. In addition to vapor-phase transport, PCE and its degradation products in the subsurface can be transported in the dissolved-phase via groundwater or other water that comes into contact with the contaminated soil. PCE, TCE, and cis-1,2-DCE in groundwater generally follow horizontal and vertical groundwater gradients, assuming some degree of seasonal fluctuation in groundwater flow direction. Groundwater beneath the Site generally flows toward the east. However, the groundwater flow direction, gradient, and velocity at the Site are periodically in a state of flux as a result of construction dewatering activities downgradient of the Property. For example, groundwater levels measured on January 6, 2014, indicate that nearby construction

dewatering, located at the southeast corner of 9th Avenue North and Broad Street (Block 43), resulted in a temporary localized changes to the groundwater flow direction at the Site. The nearby construction dewatering was completed by December of 2014. When groundwater levels were measured in June 2015, groundwater within the intermediate water-bearing had returned to a pre-dewatering groundwater flow direction, generally an eastward direction.

The contaminant distribution beneath the Site indicates that the majority of the contaminant migration beneath the Site appears to be a result of advective transport via bulk movement of groundwater. Upgradient contaminant migration, as well as some of the crossgradient distribution patterns, likely resulted from long-term diffusion and subsequent dispersion of the solvents in the subsurface.

The mobility of the highest concentrations of COCs is limited by the presence of a hard silt layer underlying much of the Property at elevations between -5 and 5 feet NAVD88. The silt layer appears to significantly restrict the vertical migration of COCs.

5.4.2 Environmental Fate of Chlorinated Solvents in the Subsurface

The primary COC at the Site is PCE. PCE is a volatile compound that will volatilize into a gaseous state from soil and/or groundwater. In areas of the Site where an impermeable cover is not present, some PCE in vapor will escape to the atmosphere. Once in the atmosphere, it will rapidly attenuate via photodegradation. However, once PCE enters the subsurface, chemical attenuation processes, such as hydrolysis, direct mineralization, and reductive dehalogenation, may affect the PCE in soil and groundwater, resulting in a natural reduction or breakdown into nontoxic components, such as chloride and carbon dioxide. Biological attenuation processes, such as reductive dechlorination and cometabolic degradation, also may affect the reduction of PCE in soil and groundwater under conducive subsurface conditions. If reductive biodegradation of PCE is occurring, the first indication is the presence of degradation compounds that include TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride.

Concentrations of PCE and its degradation products, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride are present in the intermediate water-bearing zone downgradient of the Property (Figures 22 through 25 and 28 through 35). The presence of degradation products is evidence that intrinsic bioremediation of PCE is occurring in the intermediate water-bearing zone. Degradation of chlorinated solvents primarily occurs under biotic conditions although some minor amount of degradation may be occurring under abiotic conditions (EPA 1998, Bradley 2012). Biodegradation of the PCE in groundwater is a function of the oxidation-reduction conditions of the groundwater which are partially a function of the presence or absence of electron donors and acceptors that support biological mediated degradation. PCE biodegrades at a faster rate under anaerobic conditions, which are typically found at the source area and downgradient of the source area in the dissolved-phase plume, versus at the boundaries of the plume where anoxic to aerobic conditions are predominant. Anoxic and aerobic conditions are known to be favorable to the biodegradation of vinyl chloride (Bradley 2012).

PCE's degradation products are also present in the deep water-bearing zone at monitoring wells MW103 and MW113, located beneath the 8th and 9th Avenues North ROWs (Figures 26 and 27). However, neither PCE nor its degradation products have been detected in groundwater at concentrations above their respective laboratory reporting limits in monitoring well MW104, which is screened in the deep water-bearing zone located at the east Property boundary. The presence of the chlorinated solvents in the deep water-bearing zone downgradient of the source suggests vertical dispersion of chlorinated solvents from the intermediate water-bearing

zone in this area of the Site, or an unknown contribution of chlorinated solvents in the alley between the 8th and 9th Avenues North.

The geochemistry of the intermediate water-bearing zone also provides evidence that intrinsic bioremediation of chlorinated solvents is occurring throughout the Site, primarily under anoxic to anaerobic conditions (Table 17). Studies have shown that dissolved oxygen concentrations of less than 1 milligram per liter (mg/L), nitrate concentration of less than 1 mg/L, ferrous iron concentrations of greater than 1 mg/L, sulfate concentrations of less than 20 mg/L, methane concentrations of greater than 0.5 mg/L, and negative ORP and pH readings of 5 to 9 are optimum conditions for microbial mediated biodegradation of PCE and its degradation products (EPA 1998, Bradley 2012). Dissolved concentrations of oxygen, nitrate, ferrous iron, sulfate, methane, pH, and ORP readings identified in the intermediate water-bearing zone in December 2013 (Table 17) are as follows:

- Dissolved oxygen concentrations ranging from 0.31 to 2.58 mg/L.
- Nitrate concentrations less than 0.025 to 0.750 mg/L.
- Ferrous iron concentrations ranging from 0.04 to 21.7.
- Sulfate concentrations ranging from 3.34 to 165 mg/L.
- Methane concentrations ranging from less than 0.005 to 3.45 mg/L.
- ORP readings ranging from -72 to +295 millivolts (mV). ORP readings in monitoring wells MW110 (290.6 mV) and MW119 (295.0 mV) are consider anomalous when compared to their respective dissolve oxygen concentrations (+0.52 and +0.34 mg/L, respectively).
- pH readings ranging from 6.36 to 9.56 mg/L.

Furthermore, the distribution and concentrations of alkalinity and chloride in the intermediate water-bearing zone provide evidence that PCE and its degradation products are intrinsically degrading. The concentrations of alkalinity and chloride on the margins of the plume compared the core of the plume differ by a factor of approximately 1.5 to 2 times. Alkalinity and chloride concentrations greater than 2 times background concentrations are associated with the mineralization of carbon dioxide in the aquifer (EPA 1998). Carbon dioxide results from the degradation of PCE and its degradation products, which is evident particularly beneath the alley between 8th and 9th Avenues North and beneath 9th Avenue North. An increase in chloride concentrations within the core of the plume results from the dechlorination of PCE and its degradation products. Charts showing the distribution of selected monitored natural attenuation (MNA) parameters along two flow lines are presented in Appendix D.

In the deep water-bearing zone geochemical indicators that support intrinsic bioremediation of the chlorinated solvents are inconclusive because there is no clear trend in the indicators. However, there are some indications, based on dissolved oxygen, chloride, and sulfate concentrations relative to background concentrations, that the geochemistry of the groundwater in the alley between the 8th and 9th Avenues North has the effective capacity to degrade PCE and its degradation products (Table 17).

5.5 CONTAMINANT FATE AND TRANSPORT OF PETROLEUM HYDROCARBONS

This section includes a discussion of the transport mechanisms and environmental fate of petroleum hydrocarbons in the subsurface.

The highest concentrations of petroleum hydrocarbons are located beneath the northern portion of the Property and within the 8th Avenue North ROW. The release of petroleum hydrocarbons is attributed to the former operation of refueling facilities on the Property and the east-adjointing properties.

5.5.1 Transport Mechanisms Affecting Distribution of Petroleum Hydrocarbons in the Subsurface

The environmental transport mechanisms of petroleum hydrocarbons are related to the separate phases in the subsurface. The three phases of petroleum contamination in the subsurface at the Site are vapor (in soil vapor), residual contamination (sorbed contamination on soil particles), and aqueous phase (contaminants dissolved in groundwater). Each phase is in equilibrium in the subsurface with the other phases, and the relative ratio of total subsurface contamination by petroleum hydrocarbons between the three phases is controlled by dissolution, volatilization, and sorption.

GRPH observed in soil and groundwater beneath the Site has been transported from source areas and distributed throughout the Site primarily by dispersive and advective transport mechanisms within the saturated zone. As with other chemicals, petroleum hydrocarbons tend to spread out as groundwater flows away from the source area. The extent of the hydrocarbon plume depends on the volume of the release, soil density, particle size, and seepage velocity.

Volatilization of the contaminant plume can result in mass removal of hydrocarbons by releasing vapor into the vadose zone, where soil hydrocarbon vapor can be biodegraded to an extent not possible in light nonaqueous-phase liquids (LNAPL) or dissolved phases, depending on environmental conditions. Sorption of contaminants onto soil particles or interstitial soil spaces can immobilize contaminants. Contaminants sorbed onto soil particles are not free to transport via aqueous transport or LNAPL advection. Residual contamination, although not necessarily broken down quickly over time, is generally immobile.

5.5.2 Environmental Fate in the Subsurface

The most significant fate process for petroleum hydrocarbons is biodegradation (i.e., natural attenuation). Biological degradation of contaminants in LNAPL, dissolved, residual, and vapor phases, is possible under a variety of environmental conditions, although it occurs predominantly in the aqueous, residual, and vapor phases. Degradation products of gasoline constituents are generally less toxic than their parent species. Petroleum hydrocarbons that are the most mobile (having the least viscosity and most solubility in water) are also the most easily biodegraded (e.g., aromatics). Because petroleum constituents contain thousands of carbon compounds, a vast array of biochemical transformations occur in situ in the soil and groundwater media. For example, hydroxylation can alter hydrocarbon compounds to ketone or alcohol products that are less toxic or more biologically available; aromatic reduction can convert aromatic groups to naphthenes; ring cleavage can destroy aromatic functional group species; and reduction can alter olefin functionality. The alteration and destruction of petroleum hydrocarbon constituents occur both by microbial enzyme catalytic reactions on the contaminant substrate or by direct digestion of contaminants as an electron donor or acceptor.

Any number of reactions can occur within the subsurface by microorganisms that can change the chemical distribution and concentrations of the contaminants.

5.6 EXPOSURE PATHWAYS

This section discusses the confirmed and potential human health and ecological exposure pathways at the Site. A CSM highlighting the complete pathways is presented on Figure 22 of the RI Report (SoundEarth 2013a).

5.6.1 Soil Pathway

Potential exposure pathways for soil contamination include volatilization into soil vapor and subsequent exposure through the vapor pathway or via the direct contact pathway, which comprises direct contact via dermal contact with and/or ingestion of soil beneath the Site. Protection from direct contact exposure to affected soil would require capping or excavation. At present, much of the ground surface of the Property is covered with the foundation of the former buildings, with the exception of the portions of Building B that were removed prior to the decommissioning of the four 6,000-gallon USTs associated with the former boiler room. The remaining soil exhibiting concentrations of PCE that exceed the MTCA Method B soil cleanup level of 14 mg/kg, which is considered protective of the direct contact pathway for dermal contact and/or ingestion, is covered with concrete, asphalt, and/or building structures, which minimize the risk of direct contact. While future development activities at the Site could result in exposure to contaminated soil above direct contact levels during construction, this pathway will be mitigated by virtue of the plan to remove soil within the top 15 feet of the Property containing concentrations of COCs in excess of their respective cleanup levels prior to and during redevelopment activities.

5.6.2 Groundwater Pathway

Groundwater is affected by releases directly into a water-bearing zone or by unsaturated soil contamination desorbed from the soil particles by infiltrating surface water or seasonally high groundwater conditions. Potential exposure pathways for groundwater contamination include volatilization into soil vapor and subsequent exposure through the vapor pathway or via the direct contact pathway, which comprises both the dermal contact and ingestion pathways. No groundwater supply wells at or in the vicinity of the Site are used for potable water supply. The deep water-bearing zone underlying the Site may qualify as a potential future source of potable water; however, because of the availability of municipal water supplies in the Site vicinity, there is a low probability that groundwater in the deep water-bearing zone beneath the Site or adjoining parcels would be used as a potable water source. Because there is no practical use of groundwater in the Site vicinity, excavation activities would be required for direct contact with groundwater to become a potential risk to human health. Future development or remediation activities that may be conducted within the shallow perched interval or the intermediate water-bearing zones could result in exposure to contaminated groundwater during remedial construction activities.

5.6.3 Vapor Pathway

The air-filled pore space between soil grains in the unsaturated zone or partially saturated zone is referred to as soil gas or soil vapor. Soil vapor can become contaminated from volatilization of a PCE source, specifically from PCE as a nonaqueous-phase liquid, but also from PCE adsorbed to soil mineral surfaces and, to a lesser degree, dissolved in groundwater. Ecology guidance for

evaluating soil vapor intrusion risks into structures provides generic chemical-specific screening levels for both groundwater and soil vapor that are protective of human health (Ecology 2009).

Because no buildings are currently located on the Property, the soil gas data collected during the RI were used to evaluate the potential for vapor intrusion into adjoining, off-Property buildings. The maximum detected COC soil gas concentrations and the associated screening levels protective of indoor air from the guidance are summarized in the following table.

COC	Maximum Detected Concentration in Soil Vapor ($\mu\text{g}/\text{m}^3$)	Sub-Slab Soil Gas Screening Level Protective of the Vapor Intrusion Pathway ⁽¹⁾ ($\mu\text{g}/\text{m}^2$) (Ecology 2015)
PCE	4.6	321
TCE	0.39	12.3
cis-1,2-DCE	0.31	-- ⁽³⁾
Vinyl chloride	0.71	9.33
GRPH	Not Measured	700–90,000 ⁽³⁾

NOTES:

⁽¹⁾ Sub-slab soil gas screening level CLARC database 2015.

⁽²⁾ The screening levels vary by fraction for petroleum hydrocarbons (air-phase petroleum hydrocarbons):

The sub-slab soil gas screening level for EC9-12 aliphatics is 4,700 $\mu\text{g}/\text{m}^3$.

The sub-slab soil gas screening level for EC9-10 aromatics is 6,000 $\mu\text{g}/\text{m}^3$.

The sub-soil gas screening level for EC5-8 aliphatics is 90,000 $\mu\text{g}/\text{m}^3$.

⁽³⁾ CLARC database does not currently have an indoor air cleanup level for cis-1,2-DCE.

-- = no data

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

cis-1,2-DCE = cis-1,2-dichloroethylene

CLARC = cleanup levels and risk calculations

COC = chemicals of concern

GRPH = gasoline-range petroleum hydrocarbons

Ecology = Washington State Department of Ecology

PCE = tetrachloroethylene

TCE = trichloroethylene

A comparison of the maximum detected COC concentrations in soil gas with the respective vapor intrusion screening level indicates that there is not a vapor intrusion risk under a standard exposure scenario involving a slab-on-grade, crawl space, or full basement construction at off-Property locations. In addition, any on-Property vapor risks will be mitigated in the future by use of a vapor barrier during Property redevelopment.

Because the groundwater contamination plume will remain at least temporarily following remediation activities, the groundwater screening levels for vapor intrusion are appropriately used for a screening level evaluation of the risk of vapor intrusion for future land use on the Property. The referenced guidance indicates that when conducting a Tier 1 evaluation of vapor intrusion risk, the maximum measured groundwater concentrations should be compared to the screening levels. The maximum detected COC concentrations detected in groundwater beneath the Property and the associated groundwater screening level protective of indoor air from the guidance, and updated using Ecology's CLARC database, revised in July 2015, are summarized in the following table.

COC	Maximum Detected Concentration in Groundwater (µg/L)	Groundwater Screening Level Protective of the Vapor Intrusion Pathway ⁽¹⁾ (µg/L) (Ecology 2015)
PCE	220,000	22.9
TCE	4,800	1.55
Cis-1,2-DCE	7,600	-- ⁽²⁾
Vinyl chloride	630	0.347
GRPH/DRPH/ORPH	7,200/26,000/25,000	2.9–140 ⁽³⁾
Benzene	684	2.40

NOTES:

⁽¹⁾Groundwater Screening Level is equal to the indoor air cleanup level divided by the product of an attenuation factor of 0.001, Henry's Law constant at 13 degrees Celsius (the average temperature of groundwater in Washington), and a conversion factor of 1,000.

⁽²⁾2009 guidance value. CLARC database 2015 does not currently have an indoor air cleanup level for cis-1,2-DCE.

⁽³⁾The screening levels vary by fraction for volatile petroleum hydrocarbons (volatile petroleum hydrocarbons):

The standard for EC8-10 aliphatics + EC10-12 aliphatics is 2.9 µg/L.

The standard for EC5-6 aliphatics + EC6-8 aliphatics is 140 µg/L.

-- = no data

µg/L = micrograms per liter

cis-1,2-DCE = cis-1,2-dichloroethylene

CLARC = cleanup levels and risk calculations

COC = chemicals of concern

DRPH = diesel-range petroleum hydrocarbons

GRPH = gasoline-range petroleum hydrocarbons

Ecology = Washington State Department of Ecology

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

TCE = trichloroethylene

A comparison of the maximum detected COC concentrations in groundwater with the respective vapor intrusion screening level indicates that there would be a potential vapor intrusion risk from all of the COCs under the standard exposure scenarios involving a slab-on-grade, crawl space, or full basement construction on the Property.

6.0 TECHNICAL ELEMENTS

RAOs are used to define the technical elements for the screening evaluation and to select remedial alternatives. The technical elements include ARARs, COCs, media of concern, and cleanup standards.

6.1 REMEDIAL ACTION OBJECTIVES

RAOs are statements of the goals that a remedial alternative should achieve in order to be retained for further consideration as part of the feasibility study (FS). The purpose of establishing RAOs for a site is to provide remedial alternatives that protect human health and the environment (WAC 173-340-350). In addition, RAOs are designated in order to:

- Implement administrative principles for cleanup (WAC 173-340-130).
- Meet the requirements, procedures, and expectations for conducting a FS and developing cleanup action alternatives as discussed in WAC 173-340-350 through 173-340-370.
- Develop cleanup levels (WAC 173-340-700 through 173-340-760) and remedial alternatives that are protective of human health and the environment.

In particular, RAOs must address the following threshold requirements from WAC 173-340:

- Protect human health and the environment.

- Comply with cleanup levels.
- Comply with applicable state and federal laws.
- Provide for compliance monitoring.

The overall RAO is to treat the primary source area and reduce COC concentrations in soil and groundwater to below the applicable cleanup levels at the points of compliance proposed in Section 6.4.2. In addition to mitigating risks to human health and the environment, achieving the RAO ultimately will allow Ecology to issue a No Further Action (NFA) determination for the Site.

In consideration of the anticipated future use of the Property, specific objectives for the preferred remedy include the following:

- Use in situ treatment methods, to an elevation of 0 feet NAVD88 (approximately 40 feet bgs), to treat the majority of contaminant mass beneath the Property.
- Post-treatment, excavate vadose zone soil containing COCs that present a risk to human health and the environment to 30 feet NAVD88 (approximately 10 feet bgs), as well as a limited area down to 20 feet NAVD88 (approximately 20 feet bgs) to address PCS.
- Use in situ treatment methods to reduce COCs exceeding cleanup levels in groundwater across the Site.
- Prevent further off-Property migration of COCs in groundwater at concentrations exceeding cleanup levels.
- Provide engineering controls to prevent the unacceptable risks to human health posed by COCs in groundwater until cleanup levels are achieved.
- Acquire an NFA determination for the Site.

6.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Under WAC 173-340-350 and 173-340-710, ARARs include regulatory cleanup standards, standards of control, and other environmental requirements, criteria, or limitations established under state or federal law that specifically address a contaminant, remedial action, location, or other circumstances at a site.

MTCA defines relevant and appropriate requirements as:

Those cleanup action standards, standards of control, and other environmental requirements, criteria or limitations established under state and federal law that, while not legally applicable to the hazardous substance, cleanup action, location, or other circumstances at a site, address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site.

The criteria specified in WAC 173-340-710(4) shall be used to determine if a requirement is relevant and appropriate.

Remedial actions conducted under MTCA must comply with the substantive requirements of the ARARs but are exempt from their procedural requirements (WAC 173-340-710[9]). Specifically, this exemption applies to state and local permitting requirements under the Washington State Water Pollution Control

Act, Solid Waste Management Act, Hazardous Waste Management Act, Clean Air Act, State Fisheries Code, and Shoreline Management Act.

ARARs were screened to assess their applicability to the Site. The following table summarizes the preliminary ARARs.

Preliminary ARARs for the Site

Preliminary ARAR	Citation or Source
MTCA	Chapter 70.105 of the Revised Code of Washington (RCW)
MTCA Cleanup Regulation	WAC 173-340
Ecology, Toxics Cleanup Program – <u>Guidance To Be Considered</u>	<i>Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action</i> , Review DRAFT, October 2009, Publication No. 09-09-047
State Environmental Policy Act	RCW 43.21C
Washington State Shoreline Management Act	RCW 90.58; WAC 173-18, 173-22, and 173-27
The Clean Water Act	33 United States Code (USC) 1251 et seq.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980	42 USC 9601 et seq. and Part 300 of Title 40 of the Code of Federal Regulations (40 CFR 300)
The Fish and Wildlife Coordination Act	16 USC 661-667e; the Act of March 10, 1934; Ch. 55; 48 Stat. 401
Endangered Species Act	16 USC 1531 et seq.; 50 CFR 17, 225, and 402
Native American Graves Protection and Repatriation Act	25 USC 3001 through 3013; 43 CFR 10 and Washington's Indian Graves and Records Law (RCW 27.44)
Archaeological Resources Protection Act	16 USC 470aa et seq.; 43 CFR 7
Washington State Dangerous Waste Regulations	WAC 173-303
Solid Waste Management Act	RCW 70.95; WAC 173-304 and 173-351
Occupational Safety and Health Administration Regulations	29 CFR Parts 1910, 1926
Washington Department of Labor and Industries Regulations	WAC 296
Water Quality Standards for Surface Waters of the State of Washington	RCW 90.48 and 90.54; WAC 173-201A
Water Quality Standards for Ground Water	WAC 173-200
Department of Transportation Hazardous Materials Regulations	40 CFR Parts 100 through 185
Washington State Water Well Construction Act	RCW 18.104; WAC 173-160
City of Seattle regulations, codes, and standards	All applicable or relevant and appropriate regulations, codes, and standards
King County regulations, codes, and standards	All applicable or relevant and appropriate regulations, codes, and standards

NOTES:

CFR = Code of Federal Regulations
 MTCA = Washington State Model Toxics Control Act
 RCW = Revised Code of Washington
 USC = United States Code
 WAC = Washington Administrative Code

6.3 MEDIA AND CHEMICALS OF CONCERN

The Property redevelopment plan currently includes excavating from lot line to lot line to remove the soil within the vadose zone to allow for subgrade parking and/or utilities. Final depth of any planned excavation is expected to remove soil from the vadose zone concurrent with redevelopment. Excavated soil will be transported off the site for disposal at an appropriate land disposal site. Although soil and groundwater are currently the primary medium of concern, secondary media of concern include soil vapor and indoor air by virtue of vapor transport from groundwater. The primary and secondary media and associated COCs are shown in the table below:

Media of Concern	Chemicals of Concern
Soil	PCE, TCE, GRPH, DRPH, ORPH, BTEX, metals, and PAHs
Groundwater	PCE, TCE, cis-1,2-DCE, vinyl chloride, GRPH, DRPH, ORPH, and BTEX
Soil Gas, Indoor Air	PCE, TCE, cis-1,2-DCE, vinyl chloride, GRPH, and benzene

NOTES:

BTEX = benzene, toluene, ethylbenzene, and total xylenes

cis-1,2-DCE = cis-1,2-dichloroethylene

DRPH = diesel-range petroleum hydrocarbons

GRPH = gasoline-range petroleum hydrocarbons

ORPH = oil-range petroleum hydrocarbons

PAH = polycyclic aromatic hydrocarbons

PCE = tetrachloroethylene

TCE = trichloroethylene

6.4 CLEANUP STANDARDS

The selected cleanup action alternatives must comply with the MTCA cleanup regulations specified in WAC 173-340 and with applicable state and federal laws. The cleanup levels selected for the Site are consistent with the RAOs, which state that the remedial objective is to reduce concentrations of COCs in soil and/or groundwater to below the MTCA Method A (or B, as applicable) cleanup levels. In addition to mitigating risks to human health and the environment, achieving the RAOs will allow Ecology to issue an NFA determination under Ecology's Voluntary Cleanup Program. The associated media-specific cleanup levels for the identified COCs are summarized in Sections 6.4.1 through 6.4.2 below.

6.4.1 Cleanup Levels

The cleanup levels for the COCs and media of concern are tabulated below, including the source of the standard. The proposed cleanup levels for the Site are the MTCA Method A cleanup levels for COCs in soil, which are protective of the direct-contact pathway and protective of groundwater. The MTCA Method A cleanup levels are proposed for COCs in groundwater. If no promulgated MTCA Method A cleanup level exists for a given chemical, the proposed cleanup level is the MTCA Method B Standard Formula Value for carcinogenic or non-carcinogenic compounds, depending upon the carcinogenic properties of the compound, which are protective of the direct-contact pathway.

Proposed Cleanup Levels for Soil

Chemicals of Concern	Cleanup Level (mg/kg)	Source
GRPH	0.67	MTCA Method A, Unrestricted; WAC 173-340-740(2)(b)(i)
DRPH	2,000	
ORPH	2,000	
Benzene	0.03	
Toluene	7	
Ethylbenzene	6	
Total Xylenes	9	
PCE	0.05	
TCE	0.03	
cis-1,2-DCE	30	
Vinyl chloride	160	MTCA Method A, Unrestricted; WAC 173-340-740(2)(b)(i)

NOTES:

cis-1,2-DCE = cis-1,2-dichloroethylene
 DRPH = diesel-range petroleum hydrocarbons
 GRPH = gasoline-range petroleum hydrocarbons
 mg/kg = milligrams per kilogram
 MTCA = Washington State Model Toxics Control Act

ORPH = oil-range petroleum hydrocarbons
 PCE = tetrachloroethylene
 TCE = trichloroethylene
 WAC = Washington Administrative Code

Proposed Cleanup Levels for Groundwater

Chemicals of Concern	Cleanup Level (µg/L)	Source
GRPH	800	MTCA Method A, Table Value; WAC 173-340-720(3)(b)(i)
DRPH	500	
ORPH	500	
Benzene	5	
Toluene	1,000	
Ethylbenzene	700	
Total Xylenes	1,000	
PCE	5	
TCE	5	
cis-1,2-DCE	16	
Vinyl chloride	0.2	MTCA Method A, Table Value; WAC 173-340-720(3)(b)(i)

NOTES:

µg/L = micrograms per cubic meter
 cis-1,2-DCE = cis-1,2-dichloroethylene
 DRPH = diesel-range petroleum hydrocarbons
 GRPH = gasoline-range petroleum hydrocarbons
 MTCA = Washington State Model Toxics Control Act

ORPH = oil-range petroleum hydrocarbons
 PCE = tetrachloroethylene
 TCE = trichloroethylene
 WAC = Washington Administrative Code

Proposed Screening Levels for Soil Gas

Chemicals of Concern	Screening Levels ⁽¹⁾ ($\mu\text{g}/\text{m}^3$)	Source
GRPH ⁽²⁾	4,700/14,000	"Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action", Review DRAFT, October 2009, Publication No. 09-09-047; Updated in cleanup levels and risk calculations database on September 2015 CLARC database.
Benzene	10.7/32.1	
PCE	321/962	
TCE	12.3/37	
cis-1,2-DCE ⁽³⁾	--	
Vinyl chloride	9.3/28	

NOTES:

⁽¹⁾The first value is the screening level for sub-slab measurements; the second value is the screening level for deep (>15 feet below ground surface) soil gas measurements.

⁽²⁾This is the lowest (most conservative) of the three screening level values for air-phase petroleum hydrocarbon fractions.

⁽³⁾CLARC database does not currently have an indoor air cleanup level for cis-1,2-DCE.

-- = no data

NC = noncarcinogenic

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

PCE = tetrachloroethylene

cis-1,2-DCE = cis-1,2-dichloroethylene

TCE = trichloroethylene

GRPH = gasoline-range petroleum hydrocarbons

Proposed Cleanup Levels for Indoor Air

Chemicals of Concern	Cleanup Level ($\mu\text{g}/\text{m}$)	Source
GRPH ⁽¹⁾	140	<i>Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action</i> , Review DRAFT, October 2009, Publication no. 09-09-047; Appendix B, Method B; PCE and TCE Updated in cleanup levels and risk calculations database on September 2015 CLARC database.
Benzene	0.32	
PCE	9.6	
TCE	0.37	
cis-1,2-DCE ⁽²⁾	--	
Vinyl chloride	0.28	

NOTES:

⁽¹⁾This is the lowest of the three screening level values for air-phase petroleum hydrocarbon fractions.

⁽²⁾CLARC database does not currently have an indoor air cleanup level for cis-1,2-DCE.

-- = no data

GRPH = gasoline-range petroleum hydrocarbons

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

NC = noncarcinogenic

cis-1,2-DCE = cis-1,2-dichloroethylene

PCE = tetrachloroethylene

CLARC = cleanup levels and risk calculations

TCE = trichloroethylene

6.4.2 Points of Compliance

The point of compliance is the location where the enforcement limits that are set in accordance with WAC 173-200-050 will be measured and cannot be exceeded (WAC 173-200-060). Once the cleanup levels have been attained at the defined points of compliance, the impacts present beneath the Site will no longer be considered a threat to human health or the environment. In situations where achieving the standard point of compliance is not practicable, conditional points of compliance can be implemented under the expectation that the persons responsible for undertaking the cleanup action shall demonstrate that all practical methods of treatment will be used in the Site cleanup and will not result in a greater overall threat to human health and the environment (WAC 134-340-720).

6.4.2.1 Point of Compliance for Groundwater

In accordance with WAC 173-340-720(8)(a)(b), the point of compliance for groundwater is defined as the uppermost level of the saturated zone extending vertically to the lowest depth that potentially could be impacted by the COCs throughout the Site.

6.4.2.2 Point of Compliance for Soil

In accordance with WAC 173-340-740(6)(b-d), the point of compliance for direct contact exposure is throughout the Property from the ground surface to 15 feet bgs, which is a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of development activities.

6.4.2.3 Point of Compliance for Soil Gas

Cleanup standards and points of compliance for soil gas have not been promulgated as of the date of this document, although soil gas screening levels have been published as draft guidance by Ecology (Ecology 2009) and are included as ARARs for this document. The points of compliance for soil gas are identified in the referenced guidance for both sub-slab gas (soil gas encountered just beneath a building) and deeper soil gas (defined as equal to, or greater than, 15 feet bgs).

6.4.2.4 Point of Compliance for Indoor Air

The points of compliance will be the standard point of compliance per WAC 173-340-750(6), which is ambient air throughout the Property.

7.0 SELECTED CLEANUP ACTION

The following sections summarize the feasible remedial alternatives reviewed during the FS, and they outline the components associated with the selected cleanup alternative.

7.1 EVALUATION OF FEASIBLE REMEDIATION TECHNOLOGIES

Remedial components (technologies) were evaluated with respect to the degree to which they comply with the cleanup requirements set forth in MTCA. According to MTCA, a cleanup action alternative must satisfy all of the following threshold criteria as specified in WAC 173-340-360(2):

- Protect human health and the environment.
- Comply with cleanup standards.
- Comply with applicable state and federal laws.
- Provide for compliance monitoring.

These criteria represent the minimum standards for an acceptable cleanup action.

WAC 173 340-360 (2)(b) also requires the cleanup action alternative to:

- Use permanent solutions to the maximum extent practicable.
- Provide for a reasonable restoration time frame.
- Consider public concerns on the proposed cleanup action alternative.

Using the above criteria, several remedial technologies were evaluated and screened for effectiveness, implementability, and relative cost to produce a short list for further inclusion in the development of alternatives. Table 12 of the FS Report (SoundEarth 2013b) summarizes the remedial component screening process. The remedial components that passed the screening process include the following:

- **Excavation and Land Disposal of Contaminated Soil.** Overexcavation of soil located in the northeast corner of the Property to an elevation of 20 feet NAVD88 is necessary to remove PCS that exceeds MTCA Method A cleanup levels. Land disposal is the act of removing contaminated soil from an uncontrolled condition and placing it in a controlled condition where it will produce fewer adverse environmental impacts. A controlled condition generally refers to engineered landfills that feature low permeability liners, witness systems, and leachate collection systems to prevent the disposed soil from leaching into the environment and mitigate future liability associated with the contamination.
- **Dewatering during Excavation.** Some construction dewatering will likely occur at the Property are part of the redevelopment. The amount of dewatering required will depend the vertical extent of the development, which at this time is unknown.
- **Soil Vapor Extraction.** SVE is the process of inducing a pressure and concentration gradient in the subsurface to cause volatile compounds, including PCE, TCE, GRPH, and benzene, to desorb from the soil and flow with the vapor stream to a common collection point for discharge or treatment. Collected vapors will be treated with granular-activated carbon prior to being discharged to the atmosphere.
- **Resistive Thermal Heating with Vapor Extraction.** Contaminated soil and groundwater is heated using electrical resistance to a temperature sufficient to cause the contaminants in the subsurface to volatilize to the vapor phase, where they are recovered by vapor extraction. Recovered vapor and water are treated with granular-activated carbon to remove contaminants before they are discharged.
- **In Situ Chemical Oxidation with Permanganate.** Permanganate has proven to be an effective chemical oxidant for the treatment of chlorinated solvents (PCE, TCE, cis-1,2-DCE, and vinyl chloride) in soil and groundwater. A solution of permanganate as a salt of either potassium or sodium is injected into the groundwater to chemically oxidize these target COCs.
- **Reductive Dechlorination (Anaerobic Bioremediation).** Reductive dechlorination is a proven remedial technology for chlorinated solvents. The fermentation of edible oil by indigenous microorganisms injected into the groundwater produces a rapid and significant reduction in dissolved oxygen concentrations in the saturated zone. This provides the strongly negative oxidation/reduction potential necessary to treat the target COCs by reductive dechlorination. The anaerobic zone extends far beyond the radius of influence of the edible oil itself, enhances attenuation of contaminants both up- and crossgradient of the active treatment zone, and serves as a barrier around the periphery of the treatment zone/groundwater plume, which mitigates the migration of contaminated groundwater beyond Site boundaries. Reductive dechlorination is a biotic process completed by anaerobic bacteria. Complete dechlorination of PCE produces non-toxic chloride, ethene, and ethane gas.
- **Passive Vapor Barrier.** Passive vapor barriers are materials that exhibit very low gas flow permeability and that can prevent the intrusion of vapor-phase VOCs into the interior of the building. The foundation of the future development will include the floor and walls of a one- to two-story underground parking garage. The foundation will be comprised of several feet of

concrete, which will be constructed to act as a permanent vapor barrier to contaminant migration.

- **Monitored Natural Attenuation.** MNA refers to the methods used to evaluate whether natural attenuation processes are effectively remediating a contaminant plume, and if so, at what rate. Contaminants released to the environment in concentrations that pose risks to human health or the environment are subject to natural degradation processes, such as volatilization, diffusion, biotic and abiotic reactions, and dilution. These naturally occurring attenuation processes are distinguished from an engineered remedy employed to increase the rate of remediation above the rate observed through these “natural” processes. In many cases, natural attenuation is the most cost-effective means for achieving cleanup levels.

MNA is retained as a complimentary remedial component to other engineered remedial components rather than as a stand-alone or sole remedial component to be consistent with the expectations for natural attenuation stipulated under MTCA. Under MTCA, MNA can be considered an active remedial measure if Site conditions conform to the expectations listed in WAC 173-340-370(7), as follows:

- Source control (including removal and/or treatment of hazardous substances) has been conducted to the maximum extent practicable.
- Leaving contaminants in place during the restoration time frame does not pose an unacceptable threat to human health or the environment.
- There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur at a reasonable rate at the Site.
- Appropriate monitoring requirements are conducted to verify that the natural attenuation process is taking place and that human health and the environment are protected.

7.2 CLEANUP ACTION ALTERNATIVE DEVELOPMENT AND DESCRIPTION

The development of cleanup action alternatives considered only those remedial components that effectively treat the COCs in the affected media of concern and that were conducive to the future Property redevelopment plan.

Three cleanup action alternatives were developed that are comprised of various combinations of the remedial components retained from the component screening step. The ERH/SVE system and the excavation and off-site land disposal of contaminated soil are common to each of the alternatives presented in the FS Report (SoundEarth 2013b). The cleanup action alternatives differ only in the type of treatment employed to remediate groundwater.

Because of the significant elevation changes and associated relative depths bgs across the Site, discussions regarding elevation and depth are hereafter presented in elevations above NAVD88. The three alternatives, which are described in more detail in SoundEarth’s FS Report, include the following:

- Cleanup Action Alternative 1—ERH/SVE, Excavation of Soil, and In Situ Reductive Dechlorination of Groundwater
- Cleanup Action Alternative 2—ERH/SVE, Excavation of Soil, and In Situ Chemical Oxidation of Groundwater
- Cleanup Action Alternative 3—ERH/SVE, Excavation of Soil, and Permeable Reactive Barrier Wall for Groundwater

For the purposes of designing and evaluating cleanup action alternatives, the Site was separated into three vertical treatment zones: Shallow Treatment Zone, Intermediate Treatment Zone, and Deep Treatment Zone (Figures 9 and 10). These zones are generally defined by the following:

- Shallow Treatment Zone (40 to 0 feet NAVD88). This zone is characterized by the vadose zone (30 to 40 feet NAVD88) and the first 30 feet of the saturated zone (0 to 30 feet NAVD88). As discussed in previous sections, a distinctive, very hard, silt-rich layer was consistently encountered at elevations between -5 and 5 feet NAVD88, which is holding up a majority of the solvent mass beneath the Property.
- Intermediate Treatment Zone (0 to -40 NAVD88). This zone is characterized by the approximate maximum depth beneath the Property where COC concentrations were detected above the applicable cleanup level.
- Deep Treatment Zone (-40 to -80 NAVD88). This zone is characterized by the approximate maximum depth beneath the Site where COC concentrations were detected above the applicable cleanup level.

As described in the FS Report, Cleanup Action Alternative 1 is the recommended alternative, and therefore is the selected cleanup action alternative for the Property. The cleanup action alternative includes source removal via ERH/SVE and excavation on the Property of PCS, as well as the application of in situ reductive dechlorination to treat the Sitewide groundwater plume. The selected cleanup action alternative meets the threshold requirements for cleanup actions set forth in WAC 173-340-360(3) and WAC 173-340-370.

The selected cleanup action alternative addresses the COCs in all media of concern: soil gas, soil, groundwater, and indoor air. The selected cleanup action alternative is protective of the indoor air inhalation pathway and of direct contact exposure (e.g., dermal contact, ingestion) with soil and groundwater. Treatment of the source area and active remediation of the contaminated groundwater beneath the Site demonstrate that the selected cleanup action alternative is protective of groundwater.

7.3 CLEANUP ACTION OBJECTIVES

As discussed above, the objectives of the cleanup action have been established in consideration of human health and the environment and the future use of the Property, and include the following:

- Excavating on-Property soil containing PCS at concentrations that present a risk to human health and the environment.
- Using in situ treatment methods to reduce COCs in groundwater beneath the Site exceeding cleanup levels.
- Preventing further off-Property migration of COCs in groundwater at concentrations exceeding cleanup levels.
- Providing engineering controls to prevent the unacceptable risks to human health posed by COCs in groundwater until cleanup levels are achieved.
- Acquiring a determination of NFA.

8.0 CLEANUP ACTION IMPLEMENTATION PLAN

This section provides a description of the cleanup action components that have and will be implemented in order to remediate soil and groundwater beneath the Property containing concentrations of COCs exceeding the cleanup levels.

8.1 CLEANUP ACTION IMPLEMENTATION DOCUMENTS

A detailed Sampling and Analysis Plan (SAP) and Project-Specific Health and Safety Plan (HASP) were prepared as part of the CAP and are appended to this report. The purpose of the SAP is to ensure that the sample collection, handling, and analysis conducted during and after the completion of the cleanup action will result in data that meet the data quality objectives for the cleanup action at the Property. The SAP includes requirements for sampling activities, including sampling frequency and location, analytical testing, documentation, and QA/QC for compliance monitoring. The SAP also defines the data quality objectives and standard operating procedures for the cleanup action, as well as includes details regarding sample collection and analysis, including sample collection procedures, analytical methods, QA/QC procedures, and data quality reviews (Appendix E).

The purpose of the HASP is to outline the project-specific health and safety requirements for the cleanup action. The HASP will include guidelines to reduce the potential for injury during implementation of the cleanup action, as well as incident preparedness and response procedures, emergency response and evacuation procedures, local and project emergency contact information, appropriate precautions for potential airborne contaminants and site hazards, and expected characteristics of the waste generated by the proposed work (Appendix F).

8.2 CONSTRUCTION OF THE ELECTRICAL RESISTIVE HEATING/SOIL VAPOR EXTRACTION SYSTEM

As an interim action, the ERH/SVE system was used to remediate high concentrations of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride in soil and groundwater beneath the Property. Between April 29, and June 7, 2013, SoundEarth mobilized to the site to observe the advancement of 165 electrodes, and 16 temperature points (TMP) on the Property to encompass approximately 37,943 square feet (Figures 36 and 37). The electrodes were constructed in borings advanced to 0 feet NAVD88 (i.e., approximately 30 feet into the saturated zone) within the Property boundaries using standard HSA drilling techniques. The electrodes were comprised of Schedule 40 steel. The TMPs were installed to measure/monitor subsurface temperatures within the treatment area. Each of the TMPs consisted of Schedule 80 PVC pipe installed in borings advanced using standard HSA drilling techniques. After the electrodes and TMPs were installed, pipes for the collection of recovered soil vapor were connected to the electrodes to convey soil vapor from the treatment area by vacuum to a treatment building (Figure 37). The treatment system, consisting of the power control unit (PCU), condenser, two SVE blowers, and the granular-activated carbon units associated with treating the condensate and vapor generated by the system, was located on the northern portion of the Property (Figure 37).

After installation of the electrodes, TMPs, and the vapor extraction mechanical and treatment equipment, the system was subjected to startup and testing. After testing, power was applied to the Property continuously, except for during system adjustments and routine maintenance. Thermocouples in the TMPs were monitored continuously using a PCU control and remote monitoring systems. The PCU is a variable transformer system capable of providing three simultaneous power outputs at automatically adjustable voltages. During operations, the heating contractor monitored the system remotely and provided weekly updates and conducted site visits every other week for visual inspection

and maintenance of the ERH components of the system. Additional trips were made, as necessary, to verify that the ERH system is functioning efficiently and effectively.

During ERH/SVE system operations, lower permeability soil lenses and areas with elevated chloride ion concentrations attract electricity first due to the higher electric conductivity. These areas are typically associated with the most contaminated portions of the Site where dense nonaqueous-phase liquids (DNAPL) tend to be present.

Once subsurface heating starts, the boiling points of various VOC/water mixtures are reached in the following order: DNAPL in contact with water or soil moisture, followed by dissolved VOCs, and finally, uncontaminated groundwater. This is explained by Dalton's law of partial pressures.

When a VOC is immersed in water, the combined boiling point is depressed. Consequently, the VOC/water interface will boil when the vapor pressure of the VOC plus the vapor pressure of water are equal to the ambient pressure.

The boiling temperature of water that contains dissolved phase VOCs is also depressed, depending on the VOC concentration. However, the boiling point depression due to dissolved VOCs is negligible unless the concentration is in the percent range.

The ERH/SVE system operated at the Property from approximately August to December 2014. During the treatment period, approximately 12,000 pounds (5,443 kilograms [kg]) of chlorinated solvents as volatile organics were removed the subsurface. Figure 49 presents a graph that shows the mass of chlorinated solvents removed, the average site temperature, and removal rate during the course of ERH treatment. The graph shows that at a design soil temperature of approximately 100 degrees Celsius the mass of chlorinated solvent removed from the Property reached asymptotic state of approximately 12,000 pounds (5,443 kg), meaning the ERH/SVE system reached its limit of mass removal because 98 percent of the original mass was removed. This conclusion is also supported by the fact that the removal rate substantially decreased at the asymptotic state as shown on Figure 49.

After the completion of the ERH/SVE system operation, performance soil and groundwater sampling occurred on the Property, which is discussed in sections 9.2.1 and 9.2.2.

8.3 IMPLEMENTATION FOF ERH/SVE SYSTEM

The ERH/SVE system operated at the Property from approximately August to December 2013. The system treated COCs in the shallow treatment beneath the Property.

The ERH/SVE system boundary was defined by the following criteria:

- Soil within the vadose zone (30 to 40 feet NAVD88) containing concentrations of PCE above 14 mg/kg. This is shown as the Hot Spot Area depicted on Figures 36 and 37.
- Groundwater between 0 to 40 feet NAVD88 containing concentrations of COCs above 5,000 µg/L; a concentration which can be effectively be remediated within a reasonable restoration time frame using in situ reductive dechlorination.

The ERH/SVE system was designed to reduce PCE concentrations to below 14 mg/kg in the vadose zone soil (30 to 40 feet NAVD88) to allow for the disposal of the soil at a non-hazardous, Subtitle D landfill. In addition, remediating the source area with ERH also reduced PCE concentrations in the shallow

groundwater treatment zone to less than 5,000 µg/L, which will expedite the restoration of groundwater quality beneath the Site. Further discussion of the implementation, operation and maintenance, and results of the ERH/SVE is presented in sections 8.2, 9.2.1, and 9.2.2.

Prior to the implementation of the ERH/SVE system an effort was made to estimate the total mass present within the ERH/SVE system boundary. SoundEarth developed a 10-foot by 10-foot grid system and utilized AutoCAD for irregular-shaped areas defined by angled treatment boundary lines on Figure 36. The grid system and irregular-shaped areas were used to designate areas with concentration ranges of total chlorinated VOCs as PCE based on the most recent soil and groundwater sample analytical results.

The concentrations of the decay/degradation products (PCE, TCE, total 1,2-DCE, and vinyl chloride) were normalized to the parent product, PCE. Concentrations of normalized PCE for each sample were calculated by first dividing the individual concentration of each chlorinated VOC by its respective molar mass to convert the given chlorinated VOC into its molar concentration. The individual chlorinated VOC molar masses of each sample were summed to calculate the total molar concentration of chlorinated VOCs. These total molar concentrations were multiplied by the molar mass of PCE to normalize concentrations of total chlorinated VOCs to the parent product, PCE (PCE normalized).

Volume calculations were completed by dividing the designed depth of treatment into four 10-foot elevation segments for soil (e.g., 40 to 30 feet NAVD88) and multiplying each 10-foot elevation segment by the designated surface areas of their respective concentration ranges of PCE normalized depicted on Figures 44 through 47. Groundwater was treated as a continuous volume from 10 to 40 feet bgs (Figure 48). The estimated total mass for PCE normalized for the treatment area includes mass as DNAPL from suspected source areas, and mass from adsorbed-phase soil and dissolved-phase groundwater with concentrations of total chlorinated VOCs. It is assumed the mass of total chlorinated VOCs in soil vapor is negligible; therefore, the mass of total chlorinated VOCs in soil vapor was excluded from the estimate of total mass. The following parameters were used for the total mass calculations:

- PCE Density = 101.1 pounds per cubic feet (pcf)
- Concentration ranges of PCE normalized were averaged for each designated area and 10-foot elevation segment
- Bulk Soil Density = 125.9 pcf
- Total Porosity = 0.3
- Water Density = 62.4 pcf

Using these parameters, the estimated total mass of PCE normalized within the treatment area in soil is 4,052 pounds and in groundwater is 1,161 pounds (Tables 18 and 19).

Residual DNAPL as PCE was observed within sludge located in Sump No. 4 and was sampled where a maximum PCE concentration was detected at 85,000 mg/kg. In addition, analytical results from soil and groundwater sample indicated that historical releases of PCE had likely occurred near the southern sewer line and trenches near and between Sumps No. 2, No. 4, and No. 8. Therefore, it is anticipated that a significant quantity of mass exists as DNAPL beneath the Property, but the exact quantity will not be known until final removal rates are established post-ERH/SVE treatment. Using a large residual DNAPL estimate of 7,209 pounds, the total mass of PCE normalized within the treatment area is 12,422 pounds (7,209 + 4,052 + 1,161).

The concentration ranges of PCE normalized for soil and groundwater in the treatment area are listed on Tables 18 and 19. In addition, Tables 18 and 19 present the calculated surface area for each elevation segment, volume, and mass corresponding to the average concentration range of PCE normalized in soil and groundwater.

8.3.1 On-Property Soil Performance Monitoring— ERH/SVE

Performance monitoring for soil was conducted in the vadose zone (30 to 40 feet NAVD88) to verify that the ERH/SVE system effectively reduced concentrations of PCE to below 14 mg/kg to allow for the disposal of the soil at a non-hazardous, Subtitle D landfill under Ecology's contained-in determination. Prior to treatment, soil on-Property from the surface to a depth of 10 feet bgs contained PCE concentrations ranging from less than the laboratory reporting limits (<0.005 to < 0.025) to maximum concentration of 170 mg/kg. With the exception of two sample locations, borings G-MW-1 at 8 feet bgs (170 mg/kg PCE) and boring B-9 at 4 feet bgs (PCE 19.9 mg/kg), concentrations of PCE in the soil prior to treatment with ERH/SVE were less than the PCE direct contact MTCA Method B cleanup level of 14 mg/kg. Analytical results, sample depths, analytical test methods, and applicable MTCA cleanup levels for soil samples are presented in Table 7 and Figure 17.

On February 12, 2014, after treatment by ERH/SVE was completed, SoundEarth observed the advancement of five direct-push borings (P02 to P06) adjacent to and/or proximate to borings GW-1 and B-9. The purpose of these borings was to confirm that the ERH/SVE system reduced the concentrations of PCE in the soil to less than 14 mg/kg in this area of the Property (with highest concentrations of PCE in soil on-Property). Two soil samples were collected from each boring and analyzed for chlorinated solvents. Sample depths ranged from 5 to 10 feet bgs. The highest concentration of PCE in a confirmation soil sample was 1.2 mg/kg. The sample was collected from boring P02 at a depth of 7.5 bgs. Concentrations of PCE in all other samples ranged from less than 0.025 to 0.55 mg/kg. Analytical results, sample depths, analytical test methods, and applicable MTCA cleanup levels are presented in Table 20 and Figure 50.

These results indicate that the ERH/SVE system has significantly reduced the concentrations of PCE in the vadose zone treatment area beneath the Property to less than the goal of 14 mg/kg, which was an objective the ERH/SVE System. Currently, the maximum concentration of PCE in the vadose treatment area, at depth of less than 10 feet bgs, is 1.2 mg/kg. Prior to implementation of the ERH/SVE system, the maximum concentration of PCE in the vadose zone treatment area, at depth of less than 10 feet bgs, was 170 mg/kg. This comparison shows that concentrations of PCE in the vadose treatment area have decreased greater than 100 times since completing the ERH/SVE treatment at the Property. The soils are now suitable for disposal at a non-hazardous, Subtitle D landfill.

8.3.2 Groundwater Performance Monitoring—ERH/SVE

Between May 10 and June 4, 2013, SoundEarth field staff observed the advancement of nine monitoring wells (F5, F9, F13, G12, J5, J15, K8, M15, and N7) on the Property, within the ERH/SVE treatment area. The wells were installed to a depth of approximately 40 feet bgs (0 feet NAVD88) and screened from approximately 10 feet to 40 feet bgs. Each monitoring well was constructed of 1-inch-diameter blank stainless steel casing, flush-threaded to 0.010-inch slotted well screen. The bottom of each of the wells was fitted with a threaded bottom cap. The annulus of the monitoring wells was filled with #10/20 silica sand to 2 feet above the top of the screened interval. The wells were completed at the surface with 8 feet of neat cement grout.

The monitoring wells were developed by SoundEarth field staff on July 1, 2013, by surging and purging until a minimum of five well volumes are removed and/or the groundwater no longer appeared turbid. Turbidity was measured visually by field staff conducting development activities.

Groundwater samples were collected and handled in accordance with the EPA 1996 guidance document. After collection, groundwater samples were labeled with a unique sample ID, placed on ice in a cooler, and delivered to Friedman & Bruya, Inc. under standard chain-of-custody protocols for laboratory analysis. Groundwater samples were submitted for laboratory analysis of VOCs, including PCE, TCE, cis- and trans-1,2-DCE, and vinyl chloride by EPA Method 8260C.

Groundwater samples were collected from the nine Shallow Zone monitoring wells (F5, F9, F13, G12, J5, J15, K8, M15, and N7) on July 19, 2013, prior to the start of the SVE/ERH system as a baseline groundwater monitoring. During the operation of the ERH/SVE system, performance samples were collected monthly starting in October 2013, depending on the availability of water within each given well due to the amount of water that had volatilized in the subsurface from the ERH/SVE system, to monitor the effectiveness of the system.

After the completion of the ERH/SVE system, Shallow Zone groundwater samples were collected to assess the performance of the ERH/SVE system. Groundwater samples were collected from monitoring wells F13, J15, and M15 on March 7, 2013. The most recent set of groundwater samples were collected from on-Property monitoring wells F9, F13, J5, J15, K8, and M15 on June 16, and 17, 2015.

8.3.2.1 Electric Resistive Heating/Soil Vapor Extraction On-Property Performance Groundwater Monitoring Results Pre- and Post-ERH/SVE System Operation

The following is a summary of the on-Property Shallow Zone groundwater analytical results prior to the start of the ERH/SVE system:

- Concentrations of PCE in on-Property monitoring wells ranged from 640 µg/L (N7) to 140,000 µg/L (F9).
- Concentrations of TCE in on-Property monitoring wells ranged from 50 µg/L (N7) to 3,400 µg/L (F9).
- Concentrations of cis-DCE in on-Property monitoring wells ranged from below the laboratory reporting limit (J5) to 9,200 µg/L (G12).
- Concentrations of vinyl chloride in on-Property monitoring wells ranged from below the laboratory reporting limit (N7) to 130 µg/L (G12).

The following is a summary of the on-Property Shallow Zone groundwater analytical results after the completion of the ERH/SVE system:

- Concentrations of PCE in on-Property monitoring wells ranged from 3.7 µg/L (F9) to 1,100 µg/L (J5).
- Concentrations of TCE in on-Property monitoring wells ranged from below the laboratory detection limit (F13) to 340 µg/L (J5).
- Concentrations of cis-DCE in on-Property monitoring wells ranged from 1.8 µg/L (F13) to 680 µg/L (F9).

- Concentrations of vinyl chloride in on-Property monitoring wells ranged from 0.31 µg/L (F13) to 74 µg/L (F9).

These results indicate that ERH/SVE System has greatly reduced the pre-ERH concentrations of PCE in the shallow groundwater treatment zone beneath the Property well below than the goal of 5,000 µg/L. Currently, concentrations of PCE in shallow treatment zone range from 3.7 µg/L to 1,100 µg/L. Which represents over a 1,000 times reduction in the concentration of PCE in the shallow groundwater treatment zone. This ERH treatment and reduction in the source area concentrations of PCE have translated into a greater than 10 times reduction (32,000 µg/L to 1,900 µg/L) in the concentration of PCE in the groundwater at monitoring well MW107 located in the 8th Avenue North ROW, downgradient of the source area (Table 2). Complete analytical results, sample depths, analytical test methods, and applicable MTCA cleanup levels are presented in Tables 2 and 3 and on Figure 50.

8.3.2.2 Electric Resistive Heating/Soil Vapor Extraction Off-Property Performance Groundwater Monitoring Results Pre- and Post-ERH/SVE System Operation

Groundwater performance monitoring was conducted at selected intermediate and deep water-bearing zone monitoring wells after completion of the ERH/SVE treatment at the Property. The following is a summary of the groundwater analytical results generated during the 2015 groundwater sampling events.

Intermediate Water-Bearing Zone (Intervals A and B) Wells: W-MW01, W-MW02, MW107 through MW111, MW115, MW116, MW119, MW120, and BB-8.

- Concentrations of PCE exceeding the applicable cleanup level were detected in the groundwater samples collected from monitoring wells W-MW-02, MW107, MW109, MW110, and BB-8.
- A concentration of PCE exceeding the applicable cleanup level was detected in the groundwater sample collected from MW119 in April 2015; however, the groundwater sample collected from MW119 in June 2015 was below the cleanup level but above the laboratory reporting limit.
- Concentrations of TCE exceeding the applicable cleanup level were detected in the groundwater samples collected from monitoring wells W-MW02, MW107, MW108 through MW110, MW119, and BB-8.
- A concentration of TCE exceeding the applicable cleanup level was detected in the groundwater sample collected from MW115 in April 2015; however, the groundwater sample collected from MW115 in June 2015 contained a concentration of TCE below the laboratory reporting limit.
- Concentrations of cis-1,2-DCE exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells W-MW-02, MW107 through MW110, MW119, and BB-8.
- A concentration of cis-DCE exceeding the applicable cleanup level was detected in the groundwater sample collected from MW115 in April 2015; however, the groundwater sample collected from MW115 in June 2015 contained a concentration of cis-DCE below the laboratory reporting limit.

- Concentrations of vinyl chloride exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells W-MW-01, W-MW-02, MW107 through MW111, MW115, MW119, and BB-8.
- Concentrations of PCE, TCE, cis- and trans-DCE, and vinyl chloride were below their respective laboratory reporting limits in the groundwater sample collected from monitoring well MW116, located in the 9th Avenue North ROW to the east of the Property.

These reduced groundwater results indicate that concentrations of COCs have decreased in the intermediate water-bearing zone as a result of the ERH/SVE treatment, particularly in monitoring wells located in proximate the 8th Avenue Northwest ROW (Figures 22 to 35). The decrease can be attributed a decrease in the concentration of COCs in the source area and ongoing intrinsic bioremediation of COCs in the groundwater, as can be seen by the presence of PCE degradation products in the groundwater. Localized increases in the concentration of COCs in the intermediate water-bearing zone seen in 2015 analytical results, compared to previous years, may be attributed increases in contaminant velocity resulting from localized construction dewatering, resulting in localized increases in seepage velocities. These conditions are not static and will likely return to pre-construction dewatering conditions since dewatering is complete. This conclusion is based partially on the fact that the groundwater flow direction at the Site, based on 2015 water level measurements, has return to pre-dewater conditions. A return to pre-construction dewatering conditions also means a return to normal seepage velocities and contaminant velocity for the Site.

Deep Water-Bearing Zone Wells: MW103, Mw105, and MW113.

- A concentration of TCE exceeding the applicable cleanup level was detected in the groundwater sample collected from monitoring wells MW113.
- Concentrations of cis-1,2-DCE exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells MW113, and MW128.
- Concentrations of vinyl chloride exceeding the applicable cleanup level were detected in groundwater samples collected from monitoring wells MW103, MW113, and MW128.
- Concentrations of PCE, TCE, cis- and trans-DCE, and vinyl chloride were below their respective laboratory reporting limits in the groundwater sample collected from monitoring well MW105, located in the Roy Street ROW to the southeast of the Property.

Interpretation of 2015 deep water-bearing zone groundwater analytical results is not possible based on the current limited data set for the 2015 groundwater sampling event.

8.4 CONSTRUCTION ACTIVITY SUMMARY—IN SITU ENHANCED REDUCTIVE DECHLORINATION OF GROUNDWATER

As illustrated conceptually on Figures 40 through 41, a series of injection wells will be installed across the Property for source zone treatment and as bio-barrier treatment walls along the eastern and southern Property boundaries. A carbon substrate will be injected through the injection wells into the shallow and intermediate treatment zones to treat the residual solvent plume beneath the Property by enhancing biodegradation of chlorinated VOCs. In situ enhanced reductive chlorination (ERD) at the

Property will also reduce the concentration of chlorinated VOCs in the groundwater downgradient of Property as result of degradation of contaminant mass from the source area. Implementation of the in situ reductive dechlorination at the Property will be implemented on approval the CAP by Ecology.

Reductive dechlorination of chlorinated VOCs occurs under strictly anaerobic conditions. Unlike in aerobic conditions, where bacteria obtain energy by oxidizing reduced compounds (i.e., petroleum) while utilizing oxygen as the electron acceptor, reductive dechlorination is mediated by anaerobic bacteria (e.g., *Dehalococcoides*), which obtain energy by oxidizing hydrogen and utilizing the chlorinated VOC as the electron acceptor. Through this process, chlorine atoms within the solvent molecules are replaced by hydrogen one by one. As such, PCE is reduced to TCE, which is reduced to cis-1,2-DCE, which is reduced to vinyl chloride, which is reduced to ethene, which is reduced to carbon dioxide as a detoxified final degradation product. The presence of degradation products in groundwater beneath the Property confirms that conditions are conducive to reductive dechlorination, and enhancing this naturally occurring process with carbon substrate will significantly reduce the remedial time frame.

Based on observed Site conditions, it is anticipated that the groundwater plume south of Roy Street and east of 8th Avenue North will be addressed by natural attenuation. The treatment of the source zone with ERH/SVE, and the in situ ERD groundwater treatment on the Property will significantly reduce the contaminant concentrations in groundwater beneath the Property and Site. Primary and secondary lines of evidence will be used to evaluate the rate at which natural attenuation is occurring in the groundwater south of Roy Street and east of 8th Avenue North. Primary lines of evidence will include analytical data that define a contaminated groundwater plume as shrinking, stable, or expanding for the COCs (trend analyses and isoconcentrations maps). Secondary lines of evidence for natural attenuation may include the evaluation of geochemical indicators (dissolved oxygen, ORP, pH, alkalinity, nitrate, total manganese, ferric and ferrous iron, sulfate, methane, ethene, ethane, chloride, and fatty acids) for naturally occurring biodegradation and estimates of natural attenuation rates and biodegradation capacity. Monitoring wells to be included in the natural attenuation network are as follows:

- **Intermediate Water-Bearing Zone:** MW107, MW108, MW109, MW110, MW111, MW112, MW114, MW115, MW116, MW117, MW118, MW119, and MW120
- **Deep Water-Bearing Zone:** MW102, MW103, MW104, MW105, MW106, MW113, and MW122

Currently, there are numerous lines of evidence that show that biodegradation is occurring in the intermediate water-bearing zone. These lines of evidence include the presence of PCE and its degradation products, the presence of geochemical indicators of biodegradation, and decay rates that show PCE and its degradation products are decaying over time and distance from the source area.

The spacing of the on-Property injection wells along each transect is based on soil bulk density estimates and the relatively permeable soil texture. This information was used to develop the approximate volume of carbons substrate necessary to support a zone of anaerobic dechlorination sufficient to degrade the chlorinated solvents within groundwater beneath the Site. Based on the reaction time for carbon substrate, injection transects will be spaced a distance equivalent to the distance travelled by groundwater in 3 years. The groundwater seepage velocity for each treatment zone was based on the average seepage velocity for each water-bearing zone. The seepage velocity for each water-bearing zone is discussed in greater detail in Section 2.5.3 of the FS Report (SoundEarth 2013b).

Based on the seepage velocity in the shallow treatment zone, injection transects could be spaced up to 450 feet apart; however, a more aggressive network was installed in the shallow source area as part of

the ERH system. The more aggressive injection approach in the source area will be accomplished by converting some of the 165 ERH electrodes into injection points, as well as by installing additional shallow injection points to the north of the ERH/SVE treatment boundary, with the positioning dependent on performance of the ERH/SVE system and its effect on mass outside of the direct treatment zone. Additional injection wells in the shallow water-bearing zone could be placed on 25-foot to 50-foot centers based on a combination of total carbon substrate volume required, the ability of the formation to accept the required carbon substrate, and the groundwater seepage velocity.

The injection points installed within in the intermediate treatment zone will be placed on a north-south spacing and an east-west transect spacing of approximately 75 feet. The placement of these wells was designed to accomplish full coverage of carbon substrate using a 1-foot to 5-foot dispersion ratio (dispersion rate: groundwater velocity) and the calculated seepage velocity discussed above (Figure 41). The barrier treatment wall injection points in both the shallow and intermediate treatment zones is designed for a single injection event with the wells placed on approximate 10-foot centers to prevent further off-Property migration of COCs in groundwater at concentrations exceeding cleanup levels (Figure 40 and 42). This provides a level of conservatism since it is designed to treat all of the contamination coming from the Property, to augment the extensive injection scheme implemented within the source area. The exact spacing and placement of the barrier treatment wells will be contingent on site conditions, access restrictions, and protection requirements for future use.

Manifold piping will be used to introduce carbon substrate into each of the injection wells. Upon completion of the injection on Property, the interior injection wells will be decommissioned.

8.5 CONSTRUCTION ACTIVITY SUMMARY—EXCAVATION AND LAND DISPOSAL OF PETROLUEM-CONTAMINATED SOIL

During redevelopment of the Property, soil containing petroleum hydrocarbons in the northeast corner of the Property will excavated and disposed of at a non-hazardous landfill. A summary of excavation and related redevelopment activities are discussed below.

8.5.1 Site Preparation and Mobilization

Prior to initiating construction activities, temporary erosion and sediment control (TESC) measures will be established as part of the larger construction excavation project. Once all TESC measures are implemented in accordance with the construction project plan, construction equipment and supplies will be mobilized to the Property.

8.5.2 Well Decommissioning

ERH electrodes, TMPs, existing monitoring wells, and carbon substrate injection wells on the Property will be decommissioned by a licensed well driller or under the supervision of a professional engineer in accordance with the Ecology Water Well Construction Act (1971), RCW 18.104 (WAC 173-160-460).

8.5.3 Shoring Installation

Shoring will be installed around the entire perimeter of the redevelopment and will consist of soldier piles, lagging, and tie backs. The shoring design will be incorporated into the future development plans and is not presented in this CAP. Shoring lagging will be installed in 5- to 10-foot vertical increments as the excavation proceeds, to facilitate the safe excavation of contaminated soil to the required depth.

8.5.4 Shoring and Excavation Sequence

The development mass excavation will commence after the completion of the following items:

- Installing TESC measures.
- Establishing site security and fencing.
- Preparing ingress and egress pathways and load out locations .
- Decommissioning ERH electrodes, TMPs, existing monitoring wells, and carbon substrate injection wells within the remedial excavation area.
- Installing the initial shoring system components.

Field activities will involve excavating soil from the vadose zone to the development design limits permitted for the future buildings and transporting the excavated material off the Property for land disposal (Figures 38 and 39). To address PCS detected above MTCA Method A cleanup levels beneath the northeast portion of the Property, this area will be overexcavated to approximately 20 feet NAVD88 (Figure 38) and backfilled with clean structural fill, as needed. Field screening and soil stockpile samples will be used to document COC concentrations in soil and to confirm compliance with applicable cleanup levels.

8.5.4.1 Contingency Plan to Address Unknown Contamination

The presence of aesthetic impacts and conditions encountered by site employees and equipment operators during the construction excavation activities at the Property may be indicative of conditions associated with contaminated media. Equipment operators will be instructed to use the following criteria to alert the site superintendent and construction manager of potential issues of previously unidentified contamination at the Property. Any of the following occurrences are considered common-sense criteria that may require a mitigation or remediation response. These criteria include, but are not limited to, the following:

- Obvious petroleum staining, sheen, or colored hues in soil or standing water.
- The presence of petroleum products or leachate of other chemicals.
- The presence of utility pipelines with sludge or trapped liquid indicating petroleum or chemical discharge sludge.
- The presence of buried pipes, conduits, tanks, or unexplained metallic objects or debris.
- Materials with a granular texture that suggests industrial origin.
- Vapors causing eye irritation or nose tingling or burning.
- White, chalky compounds or fine particulate soil layers.
- Presence of gasoline- or oil-like vapor or odor.
- Burnt debris or the presence of slag-like material.

Any criteria identified by on-site personnel will be evaluated and, as appropriate, a sampling plan will be developed to properly characterize and manage the material in accordance with state and federal regulations.

8.5.5 Construction Dewatering

Extensive dewatering is not anticipated at the present time due to the anticipated shallow limits of the development excavation (approximately 30 feet NAVD88, i.e., 10 feet bgs). However, the over excavation of PCS will require dewatering to reach 20 feet NAVD88 because shallow groundwater beneath the Property is at approximately 30 feet NAVD88. As the excavation proceeds, the shallow water-bearing zone will be encountered across the Property. The water will be collected at a low point in the excavation where it will be pumped to a water storage tank at the ground surface for treatment and disposal in the sanitary sewer under King County permit.

9.0 COMPLIANCE MONITORING

There are three types of compliance monitoring identified for remedial cleanup actions performed under MTCA (WAC 173-340-410): protection, performance, and confirmational monitoring. A paraphrased definition for each is presented below (WAC 173-340-410[1]). Additional details regarding procedures for sample collection, handling, and quality assurance procedures are included in the SAP and HASP, which are attached to this report as Appendices E and F, respectively.

- **Protection Monitoring**—To evaluate whether human health and the environment are adequately protected during construction and the operation and maintenance period of a cleanup action.
- **Performance Monitoring**—To document that the cleanup action has attained cleanup standards.
- **Confirmational Monitoring**—To evaluate the long-term effectiveness of cleanup action once cleanup standards or other performance standards have been attained.

9.1 PROTECTION MONITORING

A HASP has been prepared for the cleanup action that meets the minimum requirements for such a plan identified in federal (29 CFR 1910.120, and 1926) and state regulations (WAC 296). The HASP identifies all known physical, chemical, and biological hazards; hazard monitoring protocols; and administrative and engineering controls required to mitigate the identified hazards (Appendix F).

9.2 PERFORMANCE MONITORING

Performance monitoring includes the collection of soil during the remedial excavation to confirm that all of the PCS has been removed from the northeast corner of the Property and collection groundwater sampling from a network of performance monitoring wells located downgradient of the Property.

9.2.1 Soil Performance Monitoring—Remedial Excavation for PCS

Performance monitoring for soil will be conducted during the remedial excavation to confirm that all of the PCS has been removed from the northeast corner of the Property. Soil samples will be collected directly from the sidewalls and/or bottom of the excavation using either stainless steel or plastic sampling tools. Soil samples collected at depths of less than 4 feet bgs will be collected manually. Samples collected at depths below 4 feet bgs will be collected with the backhoe bucket unless engineering controls are in place that allow for manual sample collection at depths greater than 4 feet bgs. All non-dedicated sampling equipment will be decontaminated between uses. The samples will be submitted for laboratory analysis and the

analytical results will be used to assess when the points of compliance for soil have been achieved within the dangerous waste excavation area. A detailed scope for sampling and analysis is discussed in the SAP (Appendix E).

9.2.2 Future Off-Property Groundwater Performance Monitoring

Off-Property groundwater monitoring will occur at the completion of the cleanup action at the Property. Monitoring wells outside of the Property boundary will be monitored quarterly for PCE, TCE, cis- and trans- 1,2-DCE, vinyl chloride, and natural attenuation parameters. Performance monitoring results will evaluate the primary and secondary lines of evidence to support the conclusion that reduction in the concentrations of COCs is occurring in the groundwater at the Site. Primary lines of evidence will include analytical data that define the contaminated groundwater plume as shrinking, stable, or expanding using time series analyses and isoconcentrations maps. Secondary lines of evidence for natural attenuation will include the evaluation of geochemical indicators (dissolved oxygen, ORP, pH, alkalinity, nitrate, total manganese, ferric and ferrous iron, sulfate, methane, ethene, ethane, and chloride,) for confirm that naturally occurring biodegradation is occurring at the Site. The performance monitoring well network will include the following wells:

- **Intermediate Water-Bearing Zone:** MW107, MW108, MW109, MW110, MW111, MW112, MW114, MW115, MW116, MW117, MW118, MW119, and MW120
- **Deep Water-Bearing Zone:** MW102, MW103, MW104, MW105, MW106, MW113, and MW122

Quarterly performance monitoring is proposed for 1 year after completing of the in situ reductive dechlorination. After 1 year of quarterly performance groundwater monitoring, the number of wells in the network will be reviewed for data trends to determine if the number of performance monitoring wells can be reduced. Any reduction in the performance monitoring well network will be conducted in consultation with Ecology.

9.2.3 Waste Profiling

Waste generated during the cleanup action may require analytical testing before disposal. Generally, the treatment, storage, and disposal facility (TSDF) or landfill receiving the waste specifies the minimum number of samples and analyses before accepting wastes from a site or property; at the Property, data generated during the RI activities are sufficient to develop a waste profile. Wastes that will be generated from the remedial action and destined for off-site disposal include the following:

- Soil contaminated with PCE and its degradation products or GRPH, DRPH, ORPH, and associated petroleum compounds
- Contaminated groundwater from excavation dewatering
- Contaminated personal protective equipment
- Decontamination solutions
- Miscellaneous solid wastes

Each waste stream will be profiled separately in accordance with the minimum waste analyses requirements of the respective permitted TSDF. If unforeseen soil conditions are encountered, additional waste profiling may be required for proper classification and disposal.

9.3 CONFIRMATIONAL MONITORING

Confirmational monitoring will commence after the analytical data from the performance monitoring indicates that cleanup objectives for the CAP have been achieved.

9.3.1 Soil Confirmational Monitoring

Confirmational monitoring for soil will be conducted to verify that concentrations of petroleum hydrocarbons in the PCS remedial excavation are below applicable cleanup levels. Performance soil samples collected under Section 9.0 of the CAP may serve as confirmation soil samples if the concentrations of petroleum hydrocarbons in the soil samples are below applicable cleanup levels.

9.3.2 Groundwater Confirmational Monitoring

The groundwater quality beneath the Property has improved by virtue of removing the source area at the Property as result of the installation and operation of the ERH/SVE System. Further removal of the source area at the Property will result from implementation of in situ enhanced reductive dechlorination. To confirm the effectiveness of the cleanup action on groundwater quality at Property and off-Property, groundwater samples will be collected from monitoring wells located at the boundary of the Property and downgradient of the Property at a frequency discussed above under performance monitoring. Once concentrations of COCs are below their respective cleanup levels, based on post-remediation groundwater analytical results, the groundwater will be considered to be compliant with MTCA cleanup standards.

10.0 DOCUMENTATION REQUIREMENTS

Documentation of the cleanup action is necessary to meet MTCA requirements. The applicable and relevant documentation generated for the cleanup action will be submitted to Ecology for review and approval. Copies of the documents will be retained for a minimum of 3 years after completion of the cleanup action.

10.1 DOCUMENTATION MANAGEMENT

An established document control system to be implemented during the cleanup action includes the following elements, as appropriate: field report forms, excavation logs, sample summary forms, material import and export summary forms, groundwater purge and sample forms, sample chain of custody forms, waste inventory documentation, waste management labels, and sample labels. Disposal manifests for the waste generated during the cleanup action will be maintained and submitted with the project documentation.

10.2 WASTE DISPOSAL TRACKING

Specific documentation requirements will be met for transportation and disposal of the contaminated soil and groundwater during the excavation activities as required by state and federal regulations. The waste disposal tracking documentation includes analytical data, waste profiles, waste manifests, and bills of lading.

10.3 COMPLIANCE REPORTS

A Cleanup Action Report will be prepared following completion of the cleanup action activities to demonstrate compliance for soil and groundwater at the points of compliance defined for the Site. At a minimum, the report will include the following:

- ERH/SVE system operation and maintenance summary.
- Monitoring well and ERH/SVE system decommissioning documentation.
- The ERD operations and maintenance summary.
- A description of the excavation activities.
- Documentation of waste disposal tracking for the excavated soil, generated wastewater, and other associated materials.
- A figure depicting the final limits of the remedial excavation and the soil sample locations, as applicable.
- A summary of compliance monitoring analytical results.
- A description of the quarterly groundwater monitoring activities.
- A summary of the compliance sampling analytical results for groundwater for samples collected during quarterly groundwater monitoring, including summary tables.
- A figure depicting primary Property features and points of compliance/monitoring well locations.
- SoundEarth’s conclusions pertaining to the cleanup action following the completion of four consecutive quarters of confirmational groundwater monitoring.

When the compliance reports have been finalized, the reports will be submitted to Ecology for review and approval, and an NFA determination will be requested for the Site.

11.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with 700 DEXTER, LLC. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party’s sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others or the use of segregated portions of this report.

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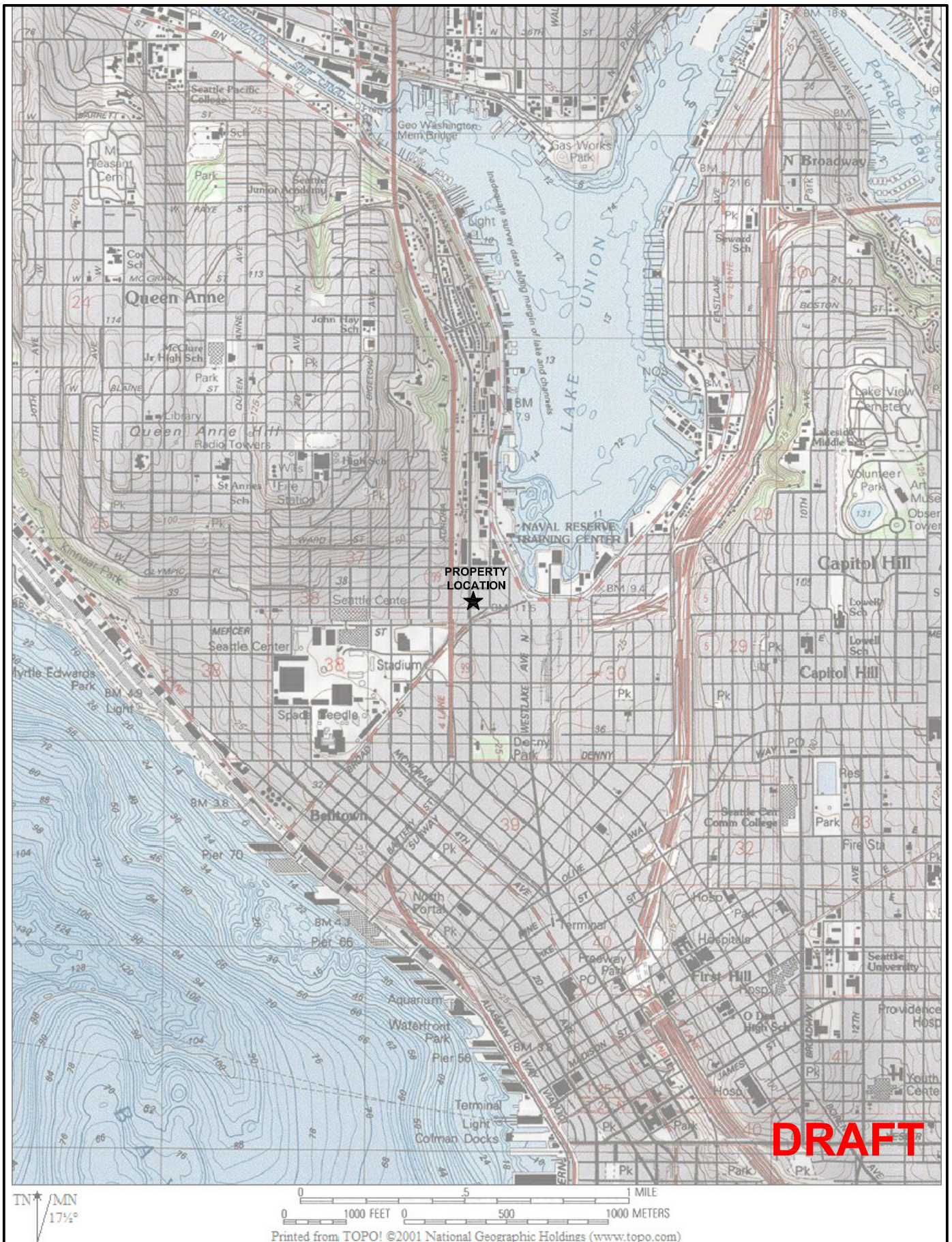
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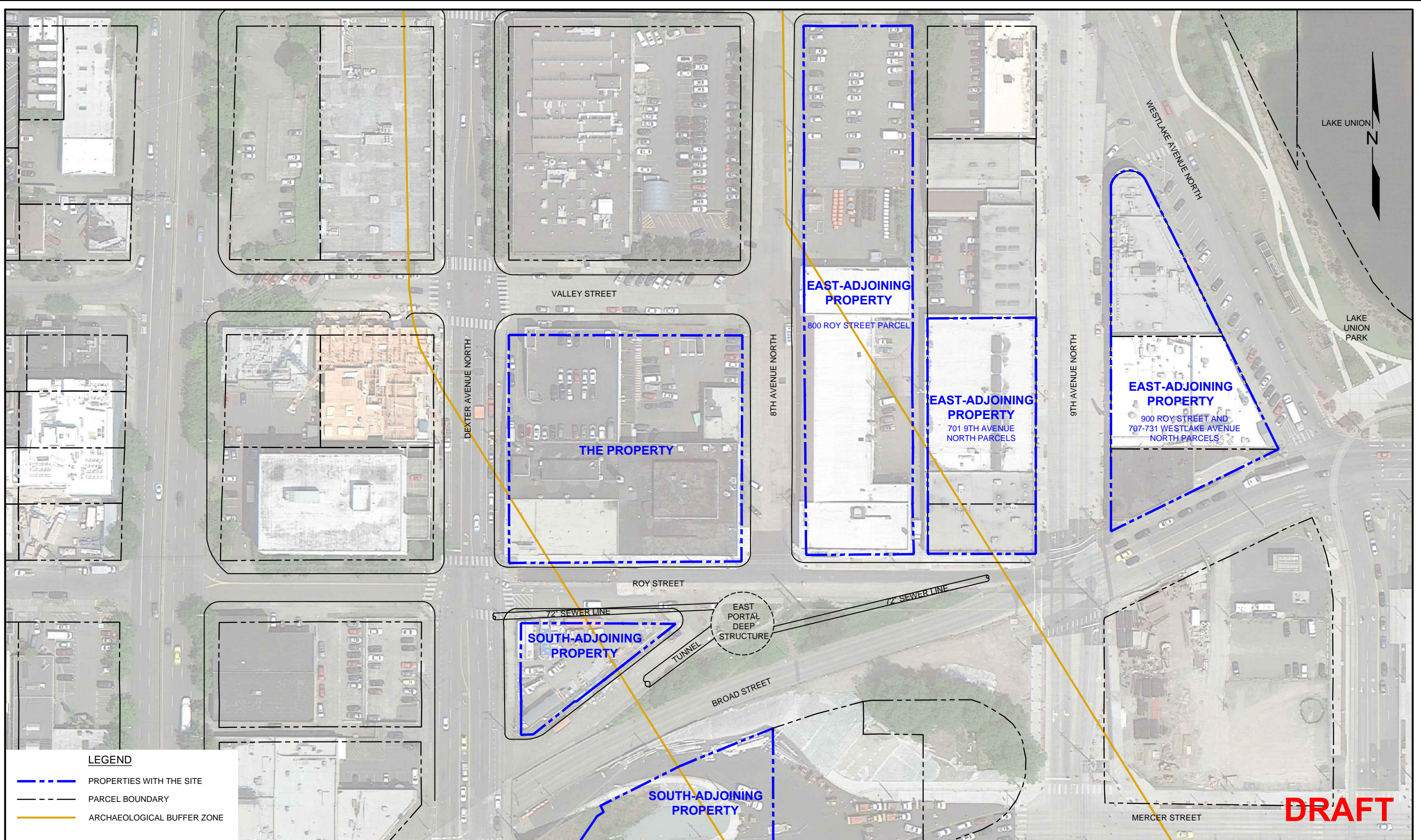
FIGURES



DATE: _____ 11/07/12
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 CHECKED BY: _____ TJC
 CAD FILE: _____ 0797-001_FIG1

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

FIGURE 1
 PROPERTY LOCATION MAP



LEGEND

- - - - - PROPERTIES WITH THE SITE
- PARCEL BOUNDARY
- - - - - ARCHAEOLOGICAL BUFFER ZONE

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 CAD FILE: _____ 0797-001_2015DCAP_SLC

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

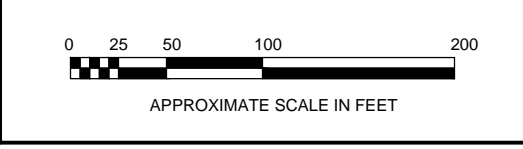
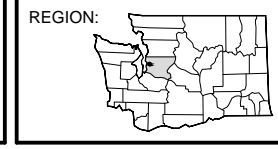
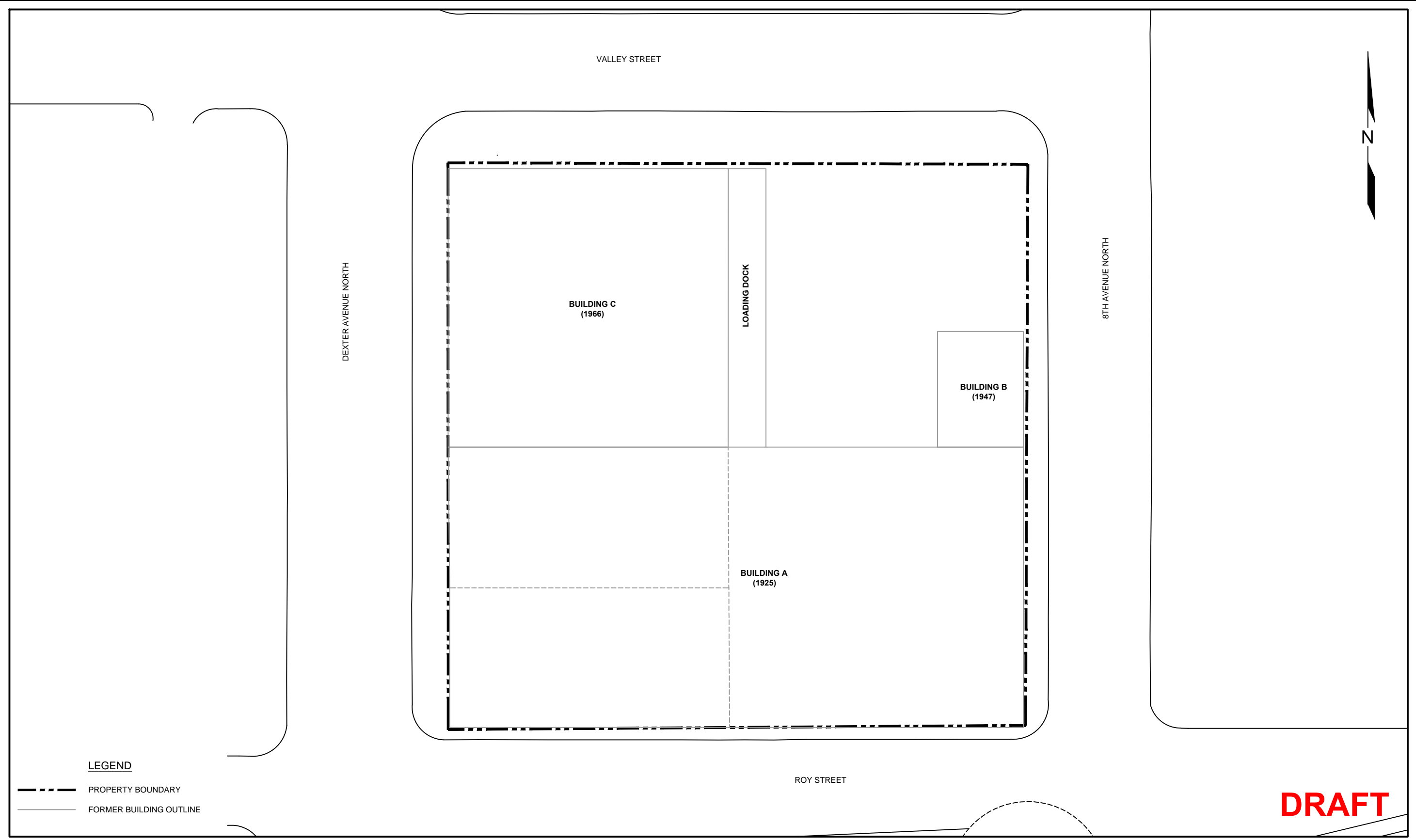


FIGURE 2
 SITE LOCATION MAP



DRAFT



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 CHECKED BY: DRAFT
 CAD FILE: 0797-001_2015DCAP_PP

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

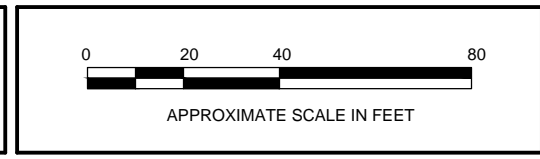
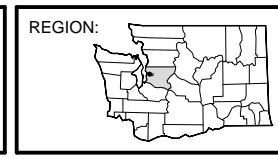
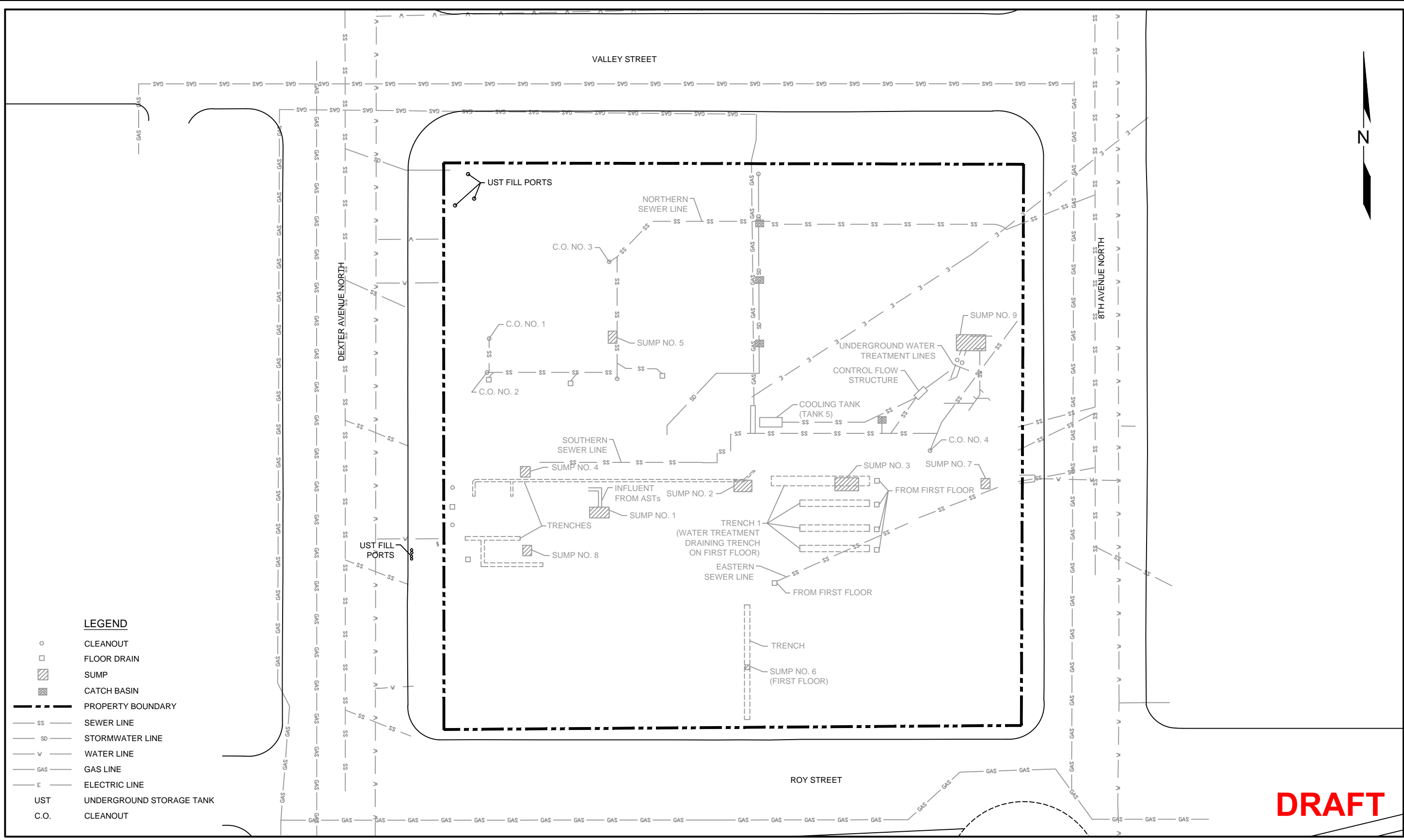


FIGURE 3
PROPERTY PLAN



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

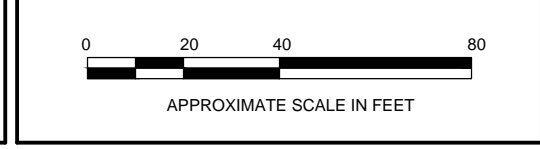
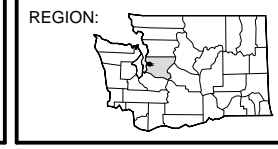
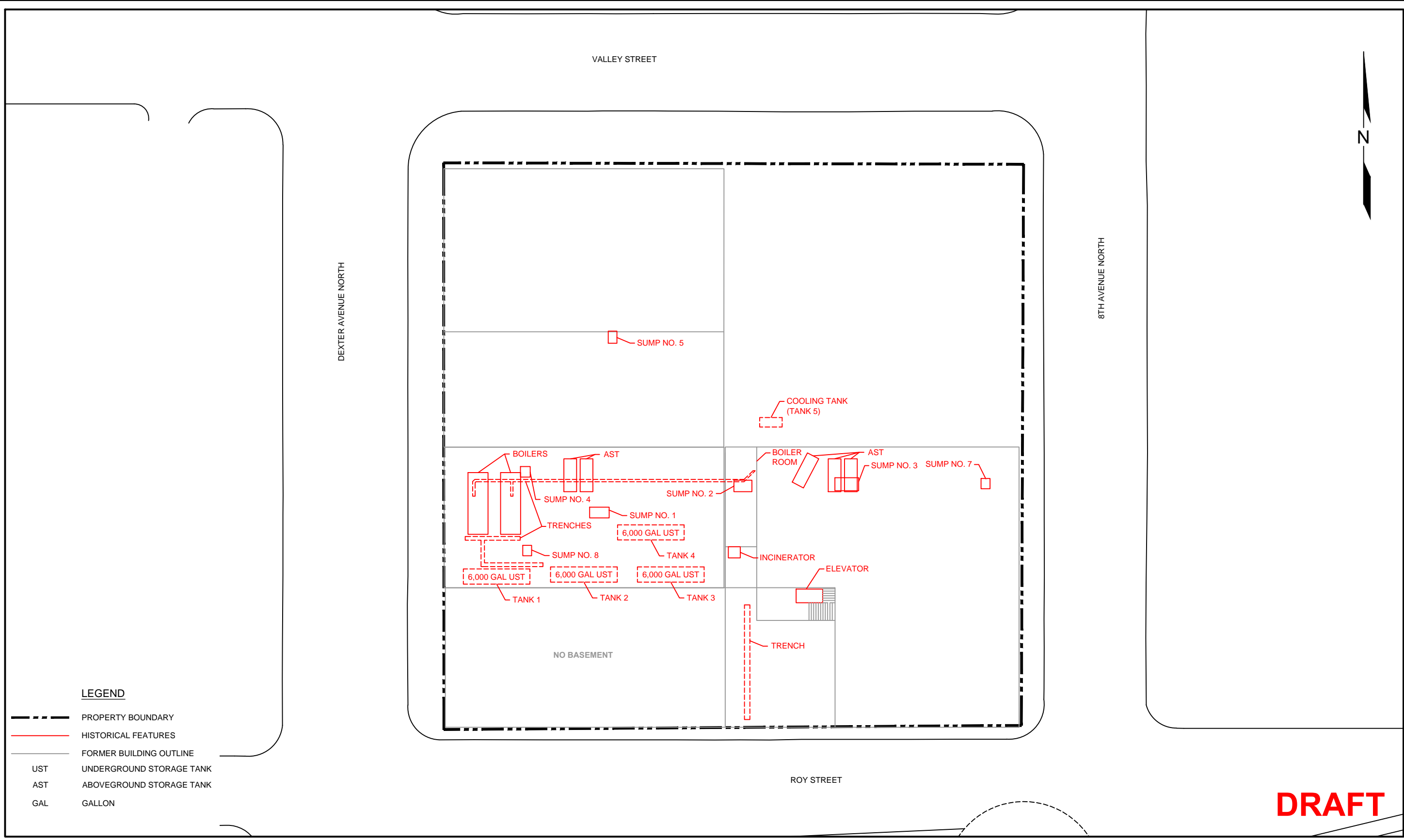


FIGURE 4
SUBSURFACE UTILITIES MAP



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

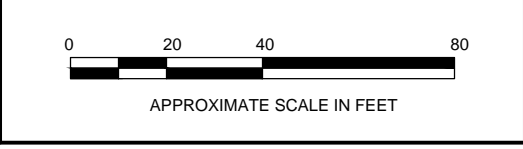
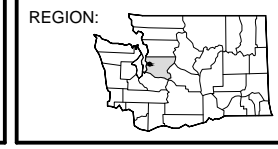
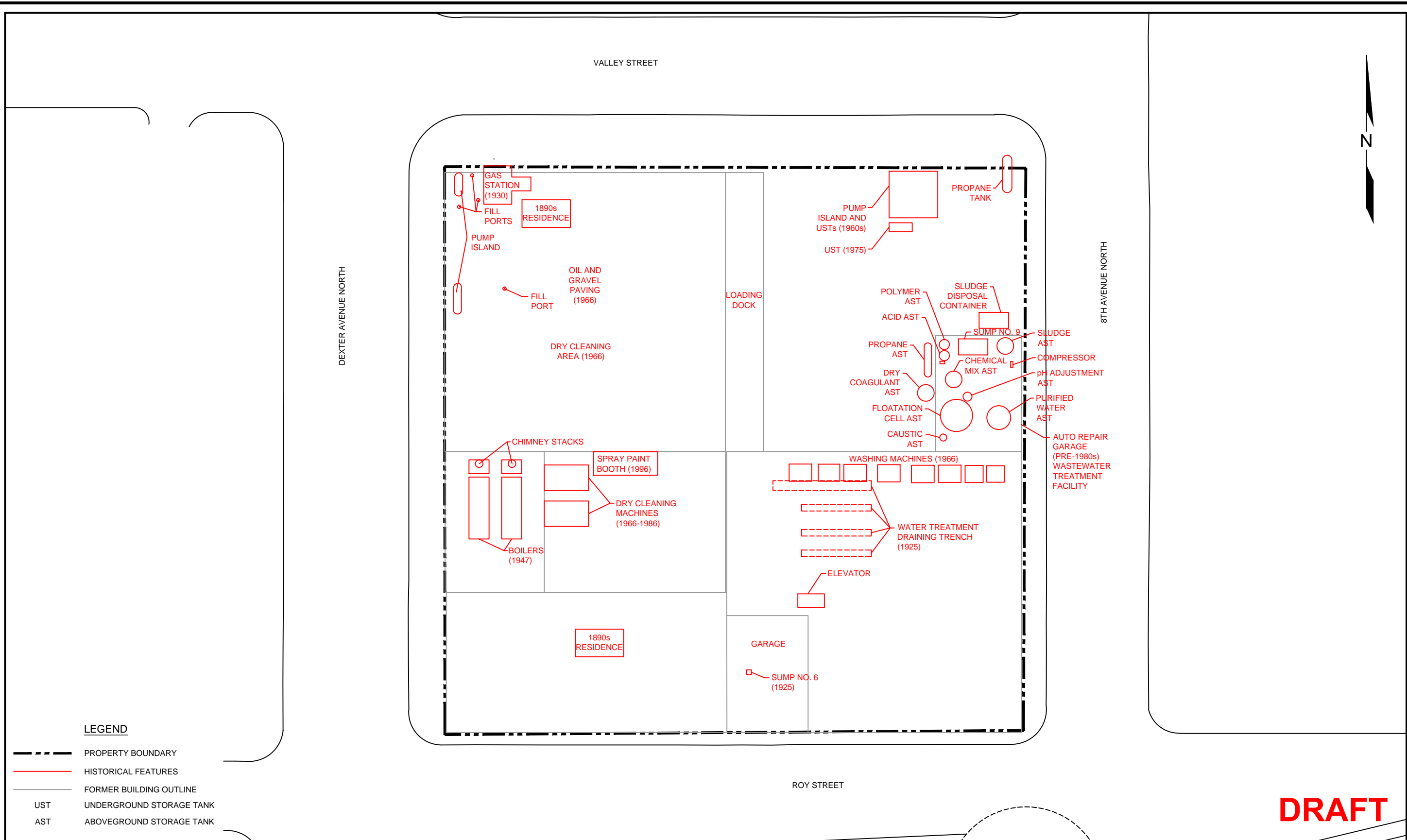


FIGURE 5
 HISTORICAL PROPERTY FEATURES
 BASEMENT



LEGEND

- PROPERTY BOUNDARY
- HISTORICAL FEATURES
- FORMER BUILDING OUTLINE
- UST UNDERGROUND STORAGE TANK
- AST ABOVEGROUND STORAGE TANK

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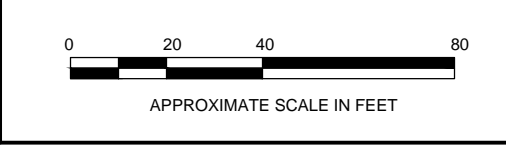
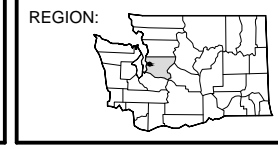
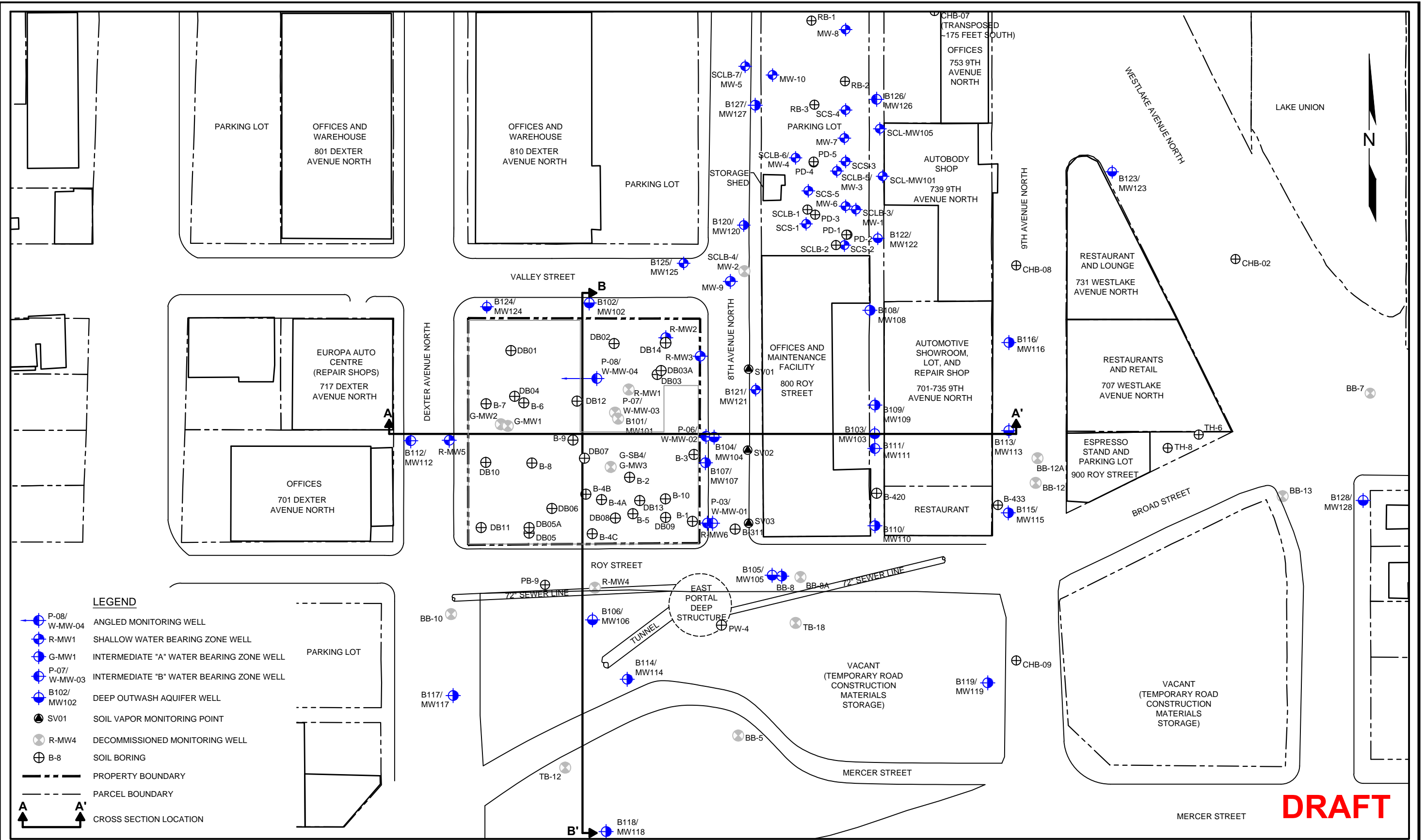


FIGURE 6
 HISTORICAL PROPERTY FEATURES
 FIRST FLOOR

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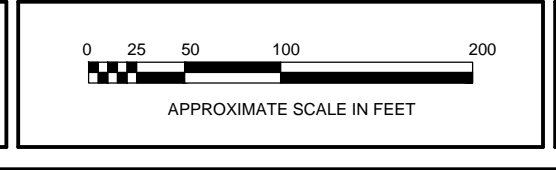
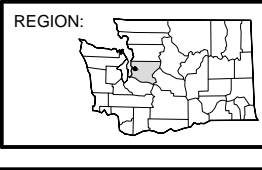
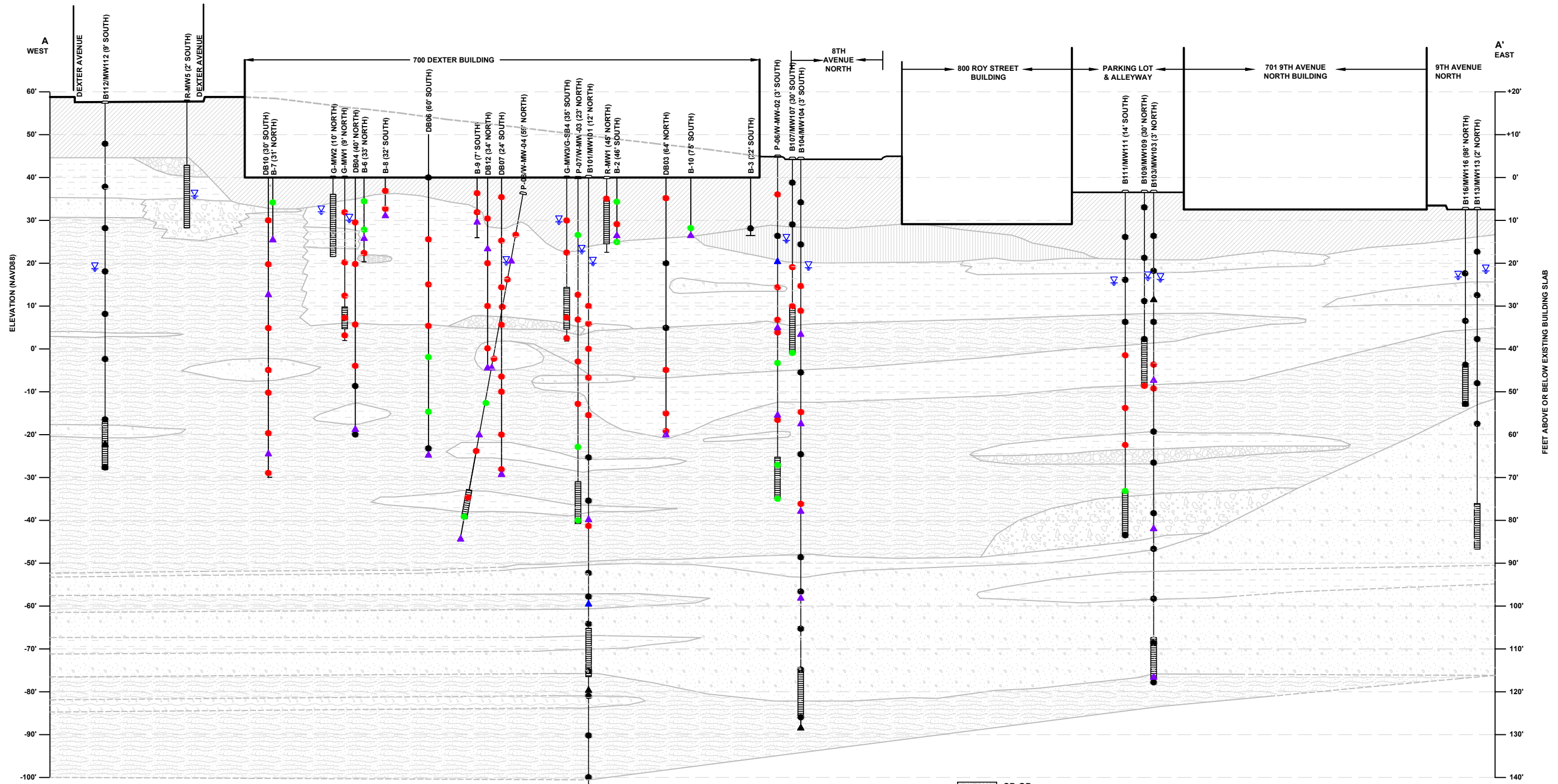


FIGURE 8
 SITE EXPLORATION LOCATION PLAN

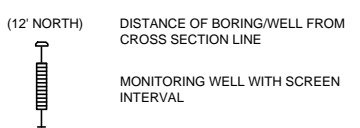
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LEGEND

- SM-ML
- SM-MH
- SM-GM
- SP: POORLY GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
- SP-SM

- ML: INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS
- SM: SILTY SANDS, SAND - CLAY MIXTURES
- GW: WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
- FILL



- SP-GP: POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
- GM: SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
- GROUNDWATER DEPTH (MARCH 29, 2013)
- PCE CONCENTRATIONS IN RECONNAISSANCE GROUNDWATER SAMPLES (µg/L):**
- CONCENTRATION BELOW LABORATORY REPORTING LIMIT
- CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL
- CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL

- PCE CONCENTRATIONS IN SOIL (mg/kg):**
- CONCENTRATION BELOW LABORATORY REPORTING LIMIT
- CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL
- CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- PCE TETRACHLOROETHYLENE
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- µg/L MICROGRAMS PER LITER
- mg/kg MILLIGRAMS PER KILOGRAM

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 CITY, STATE: SEATTLE, WASHINGTON

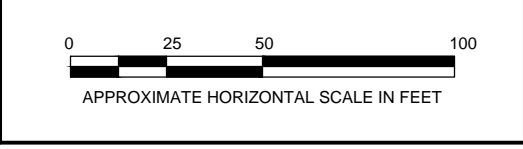
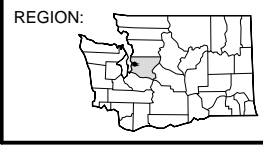
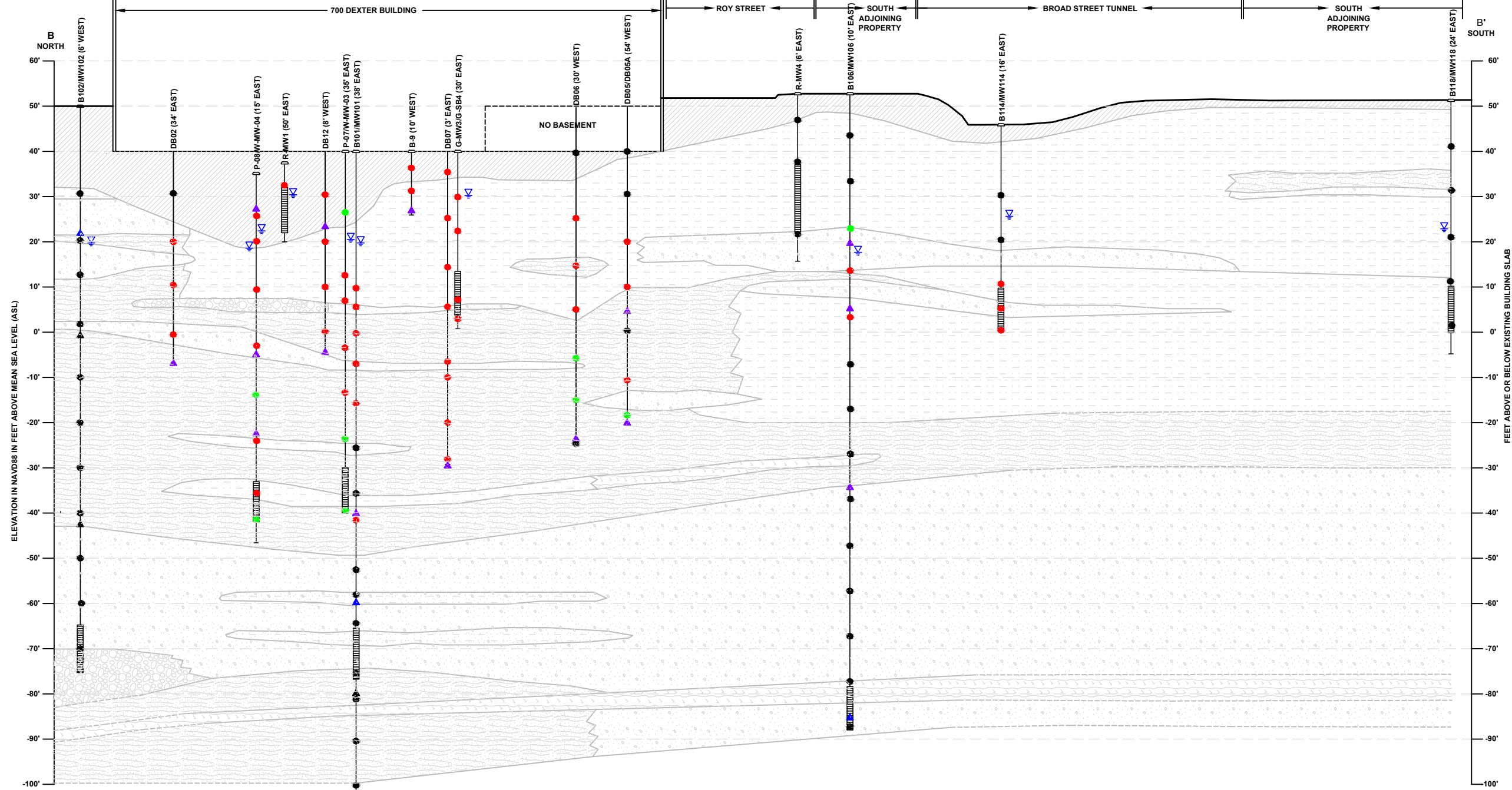


FIGURE 9
 GEOLOGIC CROSS SECTION A - A'



LEGEND

- | | | | |
|--|---|---|---|
| ML: INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS | SP-GP: POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES | GROUNDWATER DEPTH (MARCH 29, 2013) | PCE CONCENTRATIONS IN SOIL (mg/kg): |
| SM: SILTY SANDS, SAND - CLAY MIXTURES | GM: SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES | CONCENTRATION BELOW LABORATORY REPORTING LIMIT | CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL |
| SM-ML | GW: WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES | CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL | CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL |
| SM-MH | FILL | CONCENTRATION BELOW LABORATORY REPORTING LIMIT | PCE TETRACHLOROETHYLENE |
| SM-GM | | CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL | MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT |
| SP: POORLY GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES | (12' NORTH) DISTANCE OF BORING/WELL FROM CROSS SECTION LINE | CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL | µg/L MICROGRAMS PER LITER |
| SP-SM | MONITORING WELL WITH SCREEN INTERVAL | | mg/kg MILLIGRAMS PER KILOGRAM |

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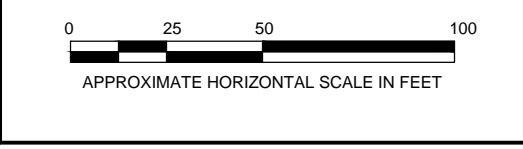
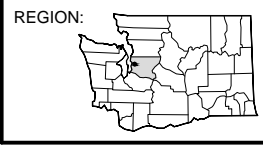
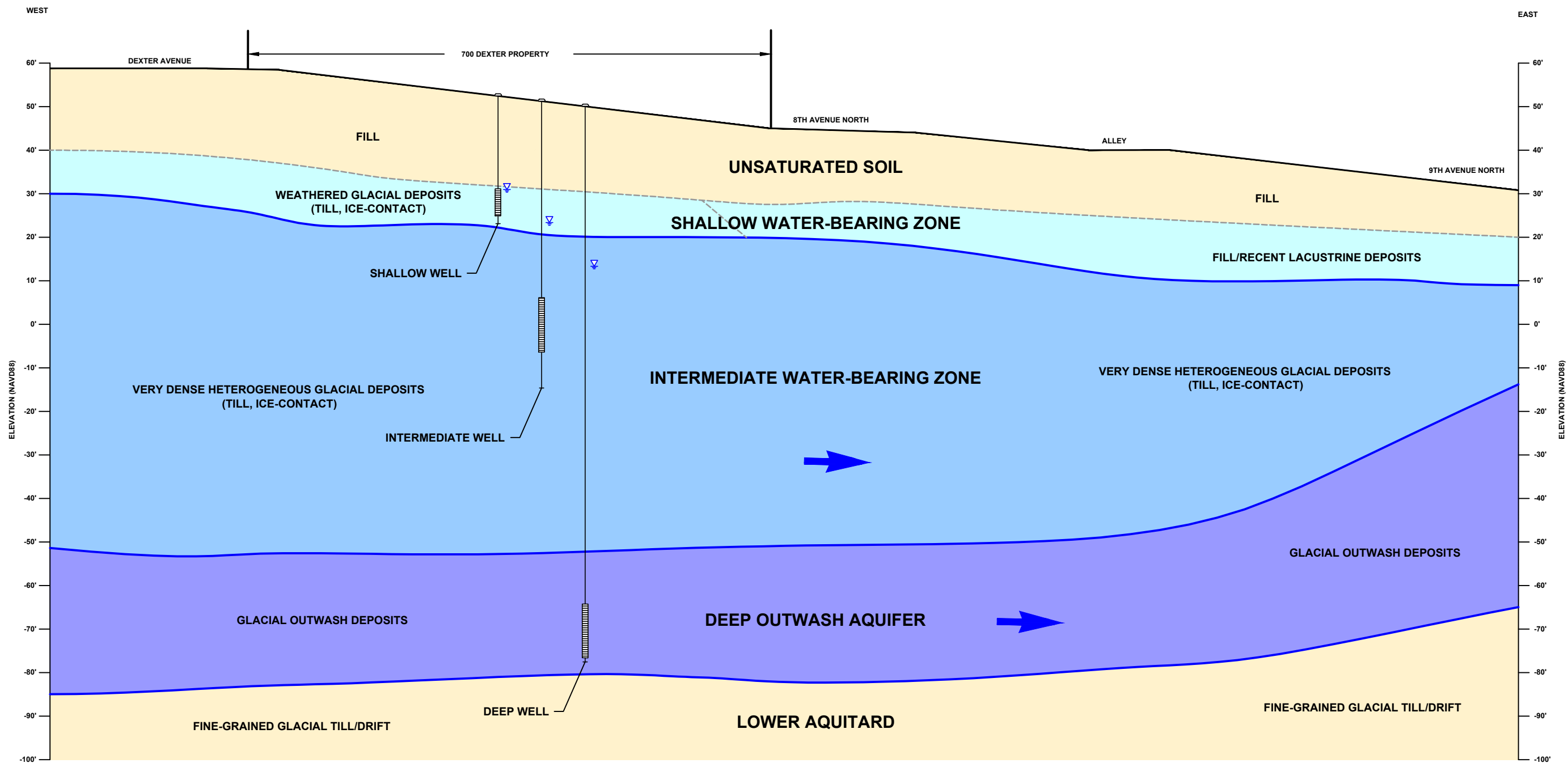


FIGURE 10
 GEOLOGIC CROSS SECTION B - B'

9/4/2015

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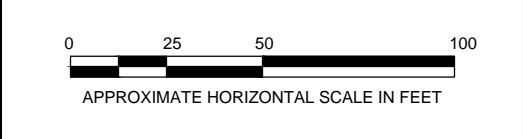
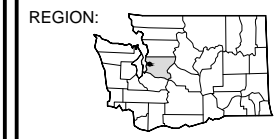
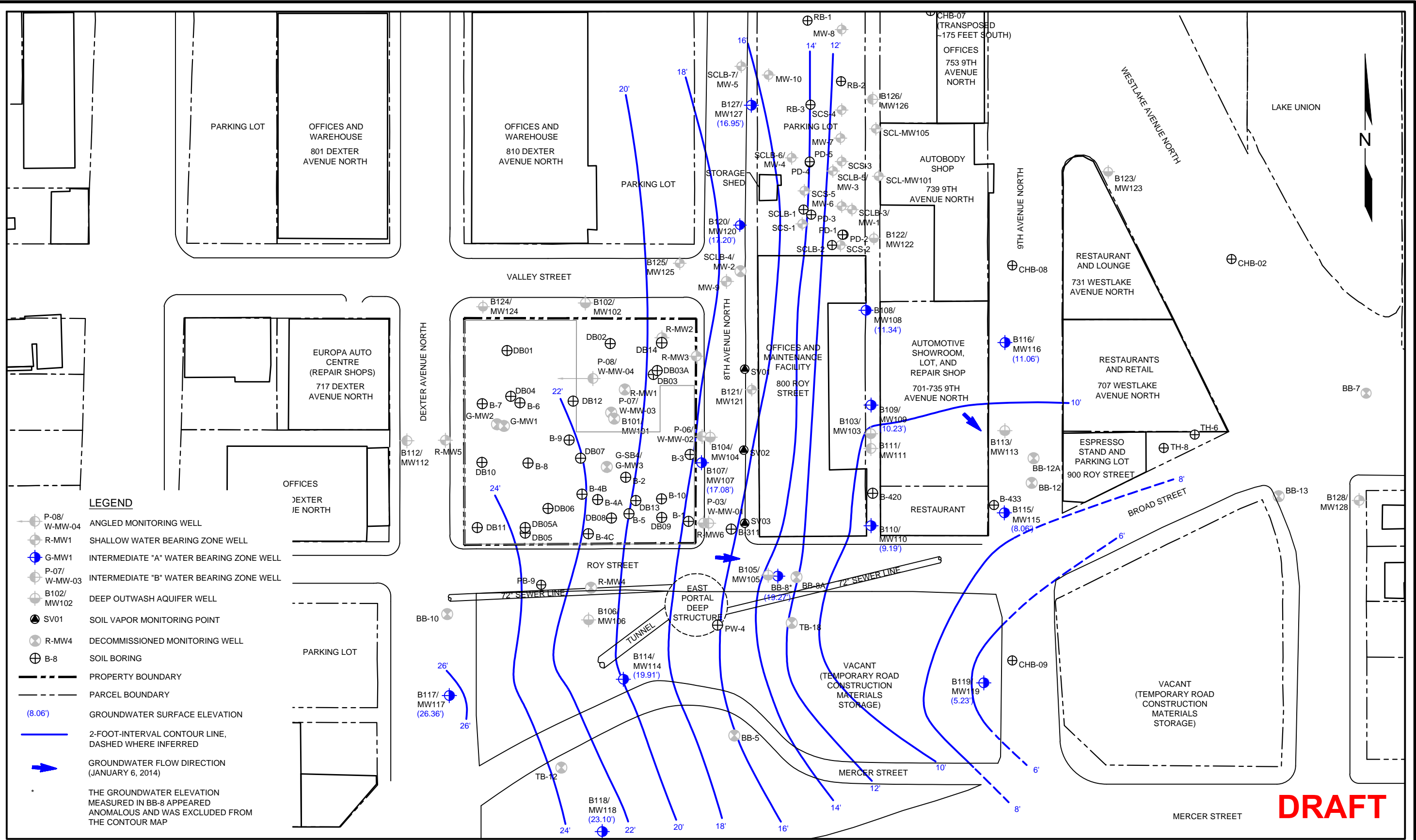


FIGURE 11
 CONCEPTUAL MODEL OF SITE
 WATER-BEARING ZONES

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- LEGEND**
- P-08/
W-MW-04 ANGLED MONITORING WELL
 - R-MW1 SHALLOW WATER BEARING ZONE WELL
 - G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
 - P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
 - B102/
MW102 DEEP OUTWASH AQUIFER WELL
 - SV01 SOIL VAPOR MONITORING POINT
 - R-MW4 DECOMMISSIONED MONITORING WELL
 - B-8 SOIL BORING
 - PROPERTY BOUNDARY
 - PARCEL BOUNDARY
 - (8.06') GROUNDWATER SURFACE ELEVATION
 - 2-FOOT-INTERVAL CONTOUR LINE, DASHED WHERE INFERRED
 - GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)
- THE GROUNDWATER ELEVATION MEASURED IN BB-8 APPEARED ANOMALOUS AND WAS EXCLUDED FROM THE CONTOUR MAP

DRAFT



DATE: 01/15/14
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 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_CM-I

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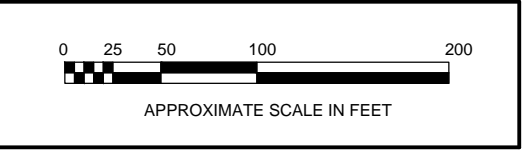
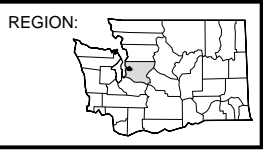
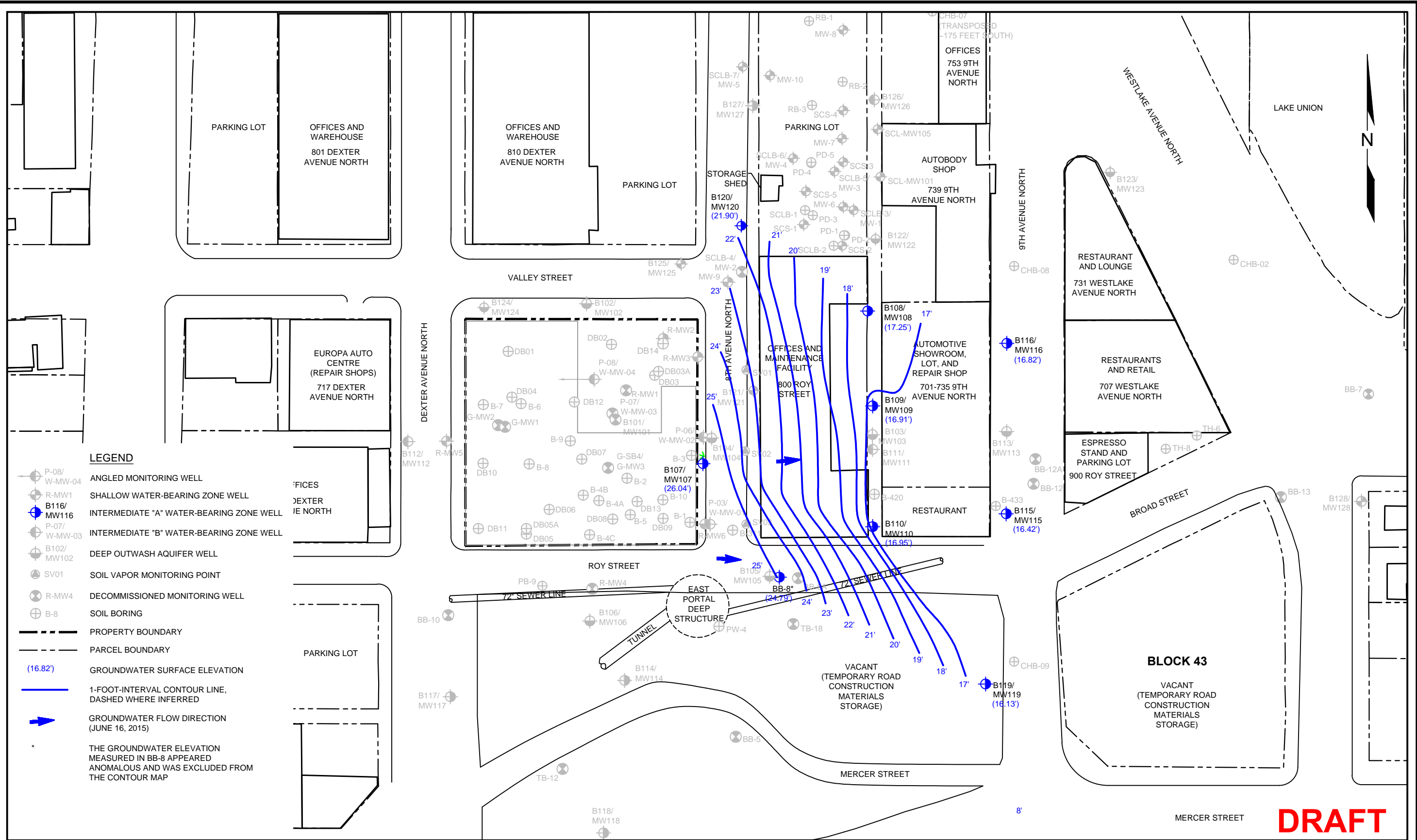


FIGURE 12
 GROUNDWATER CONTOUR MAP
 INTERMEDIATE "A" WATER-BEARING ZONE
 (JANUARY 6, 2014)



LEGEND

- P-08/
W-MW-04 ANGLLED MONITORING WELL
- R-MW1 SHALLOW WATER-BEARING ZONE WELL
- B116/
MW116 INTERMEDIATE "A" WATER-BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER-BEARING ZONE WELL
- B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- (16.82') GROUNDWATER SURFACE ELEVATION
- 1-FOOT-INTERVAL CONTOUR LINE, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION (JUNE 16, 2015)
- THE GROUNDWATER ELEVATION MEASURED IN BB-8 APPEARED ANOMALOUS AND WAS EXCLUDED FROM THE CONTOUR MAP

DATE: 6/23/15
 DRAWN BY: JQC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_GW_FIG13

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 CITY, STATE: SEATTLE, WASHINGTON

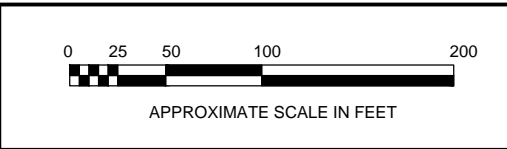
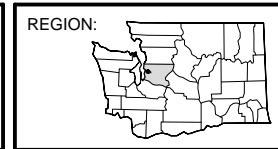
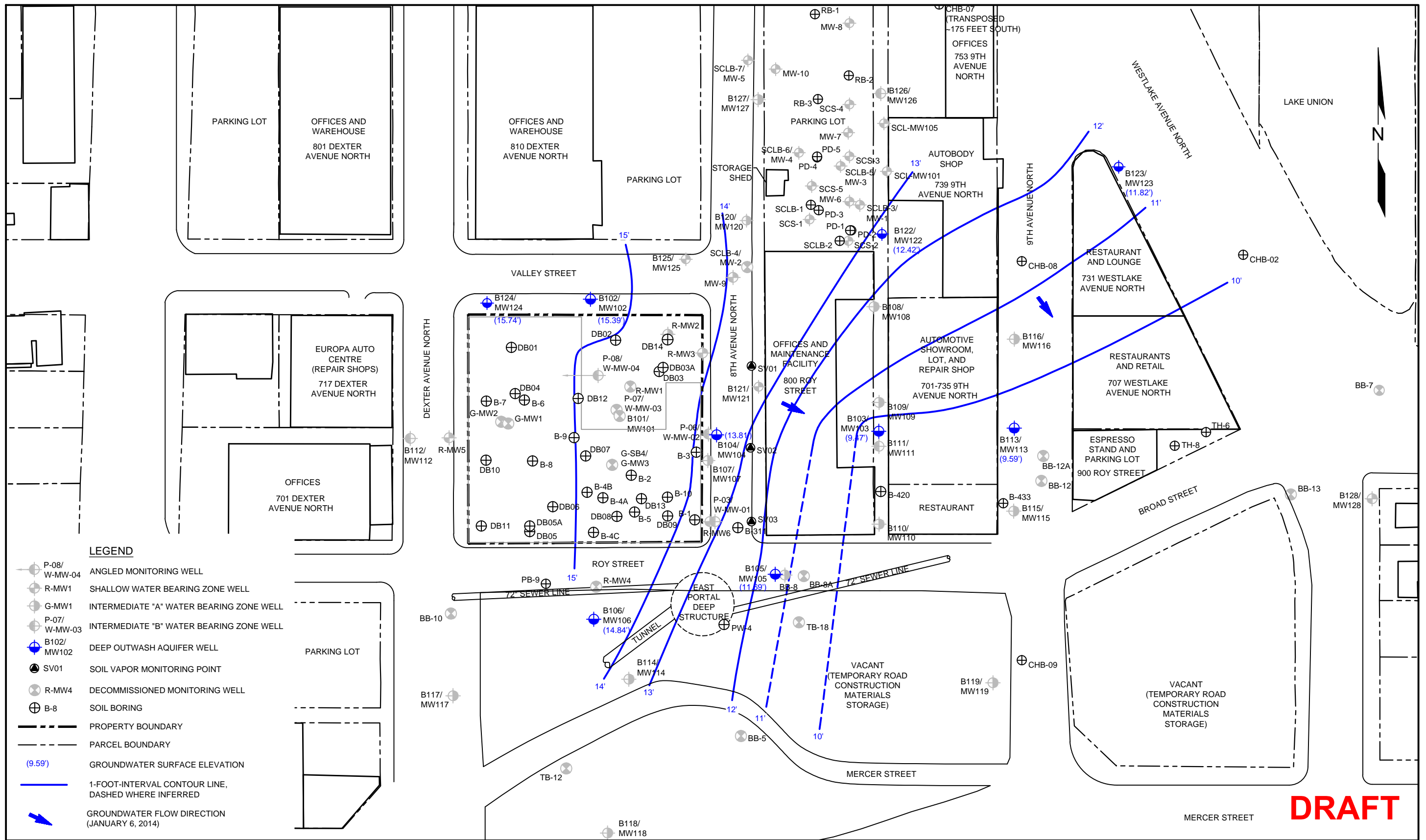


FIGURE 13
 GROUNDWATER CONTOUR MAP
 INTERMEDIATE "A" WATER-BEARING ZONE
 (JUNE 16, 2015)

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LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- (9.59') GROUNDWATER SURFACE ELEVATION
- 1-FOOT-INTERVAL CONTOUR LINE,
DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION
(JANUARY 6, 2014)

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 CHECKED BY: _____ CCC
 CAD FILE: _____ 0797-001_2015DCAP_CM-D

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

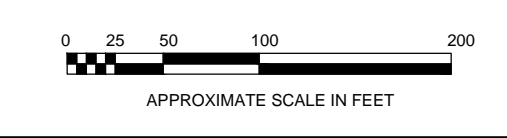
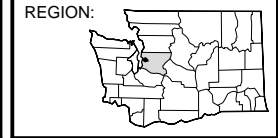
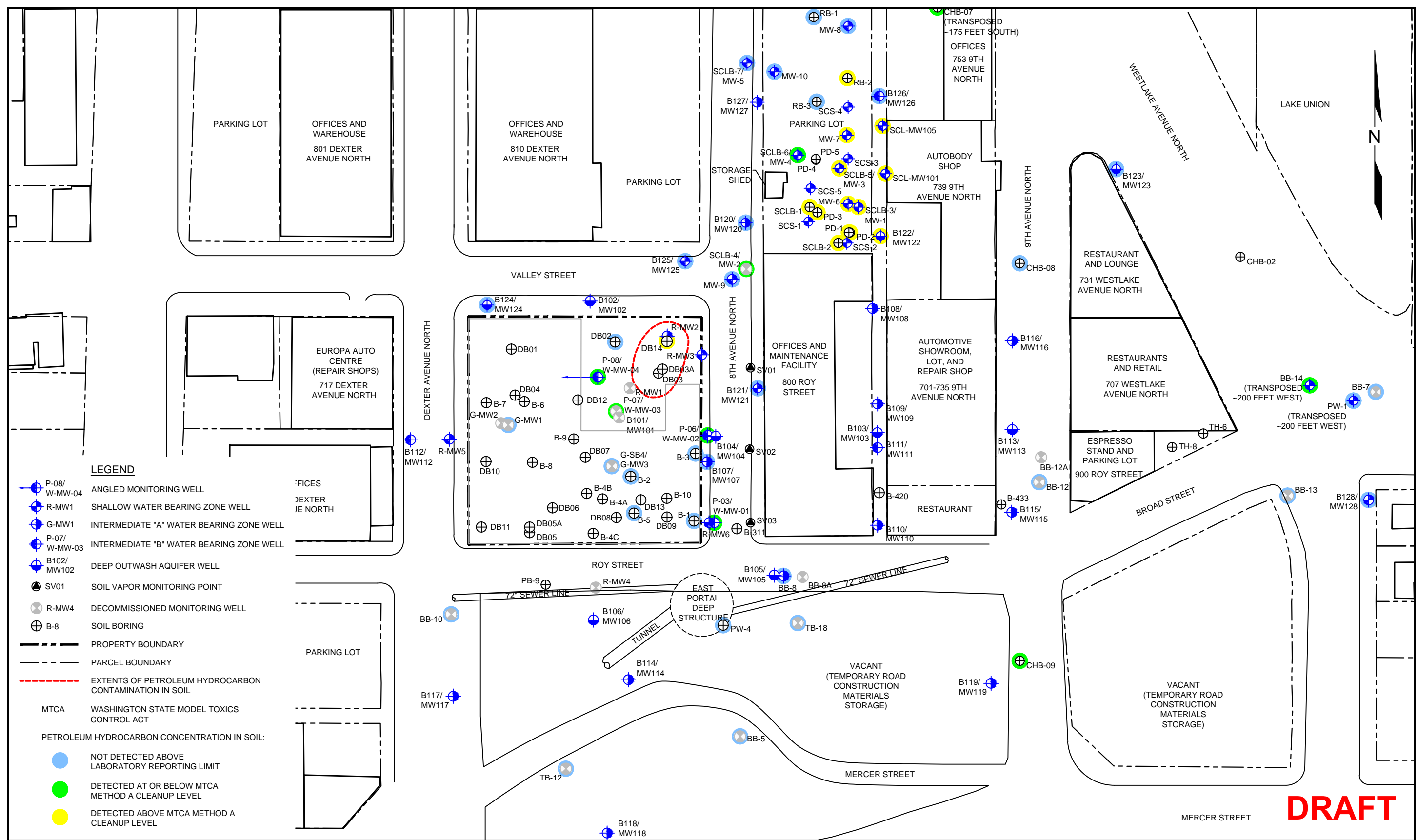


FIGURE 14
 GROUNDWATER CONTOUR MAP
 DEEP WATER-BEARING ZONE
 (JANUARY 6, 2014)



LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- EXTENTS OF PETROLEUM HYDROCARBON CONTAMINATION IN SOIL
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- PETROLEUM HYDROCARBON CONCENTRATION IN SOIL: NOT DETECTED ABOVE LABORATORY REPORTING LIMIT
- DETECTED AT OR BELOW MTCA METHOD A CLEANUP LEVEL
- DETECTED ABOVE MTCA METHOD A CLEANUP LEVEL

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DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_SD_PH

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

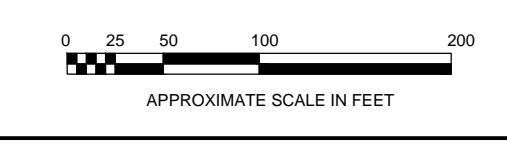
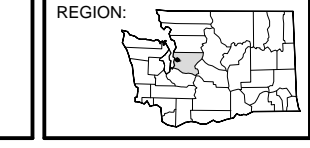
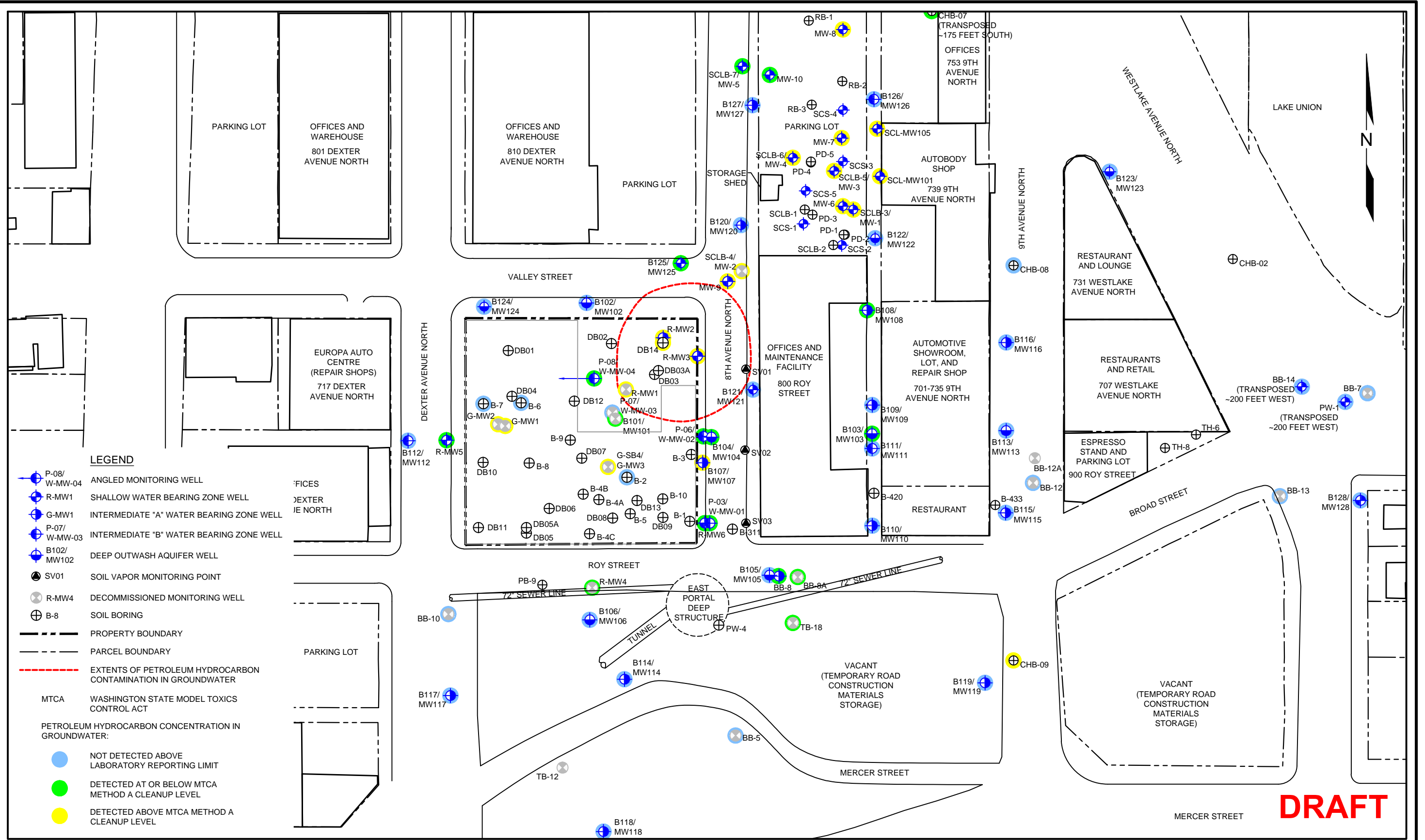


FIGURE 15
 PETROLEUM HYDROCARBON CONCENTRATIONS IN SOIL



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 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_GD_PH

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

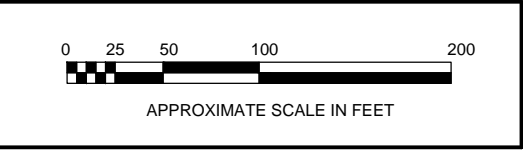
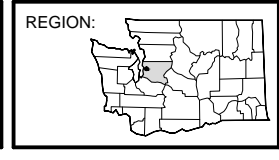
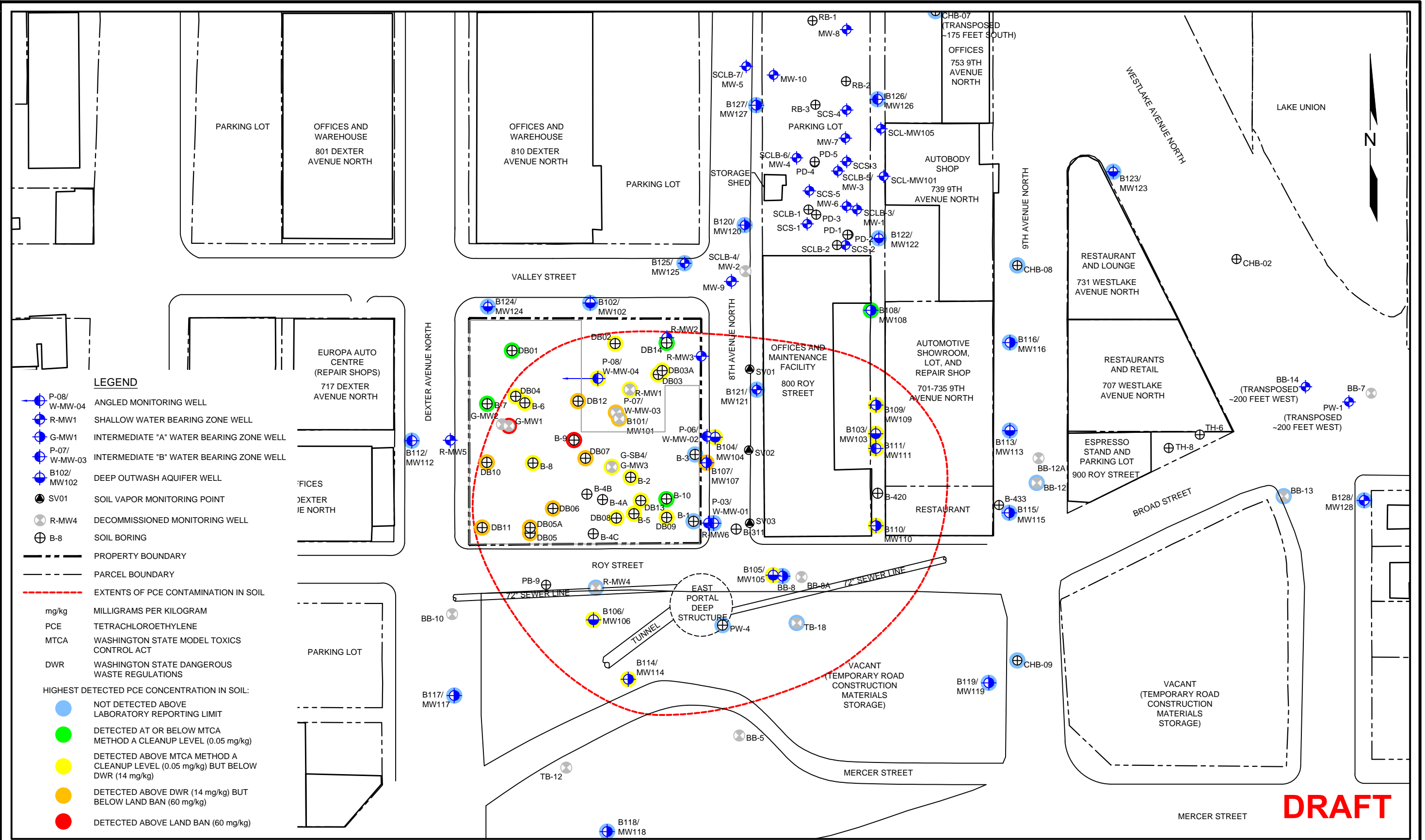


FIGURE 16
 PETROLEUM HYDROCARBON
 CONCENTRATIONS IN GROUNDWATER

9/15/2015
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LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- EXTENTS OF PCE CONTAMINATION IN SOIL

mg/kg MILLIGRAMS PER KILOGRAM
PCE TETRACHLOROETHYLENE
MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
DWR WASHINGTON STATE DANGEROUS WASTE REGULATIONS

HIGHEST DETECTED PCE CONCENTRATION IN SOIL:

- NOT DETECTED ABOVE LABORATORY REPORTING LIMIT
- DETECTED AT OR BELOW MTCA METHOD A CLEANUP LEVEL (0.05 mg/kg)
- DETECTED ABOVE MTCA METHOD A CLEANUP LEVEL (0.05 mg/kg) BUT BELOW DWR (14 mg/kg)
- DETECTED ABOVE DWR (14 mg/kg) BUT BELOW LAND BAN (60 mg/kg)
- DETECTED ABOVE LAND BAN (60 mg/kg)



DATE: 01/15/14
DRAWN BY: BLR/JQC/NAC
CHECKED BY: CCC
CAD FILE: 0797-001_2014CAP_SD_PCE

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

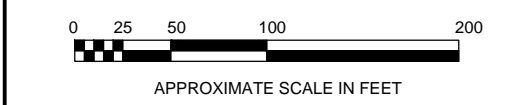
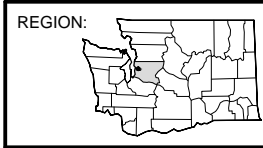
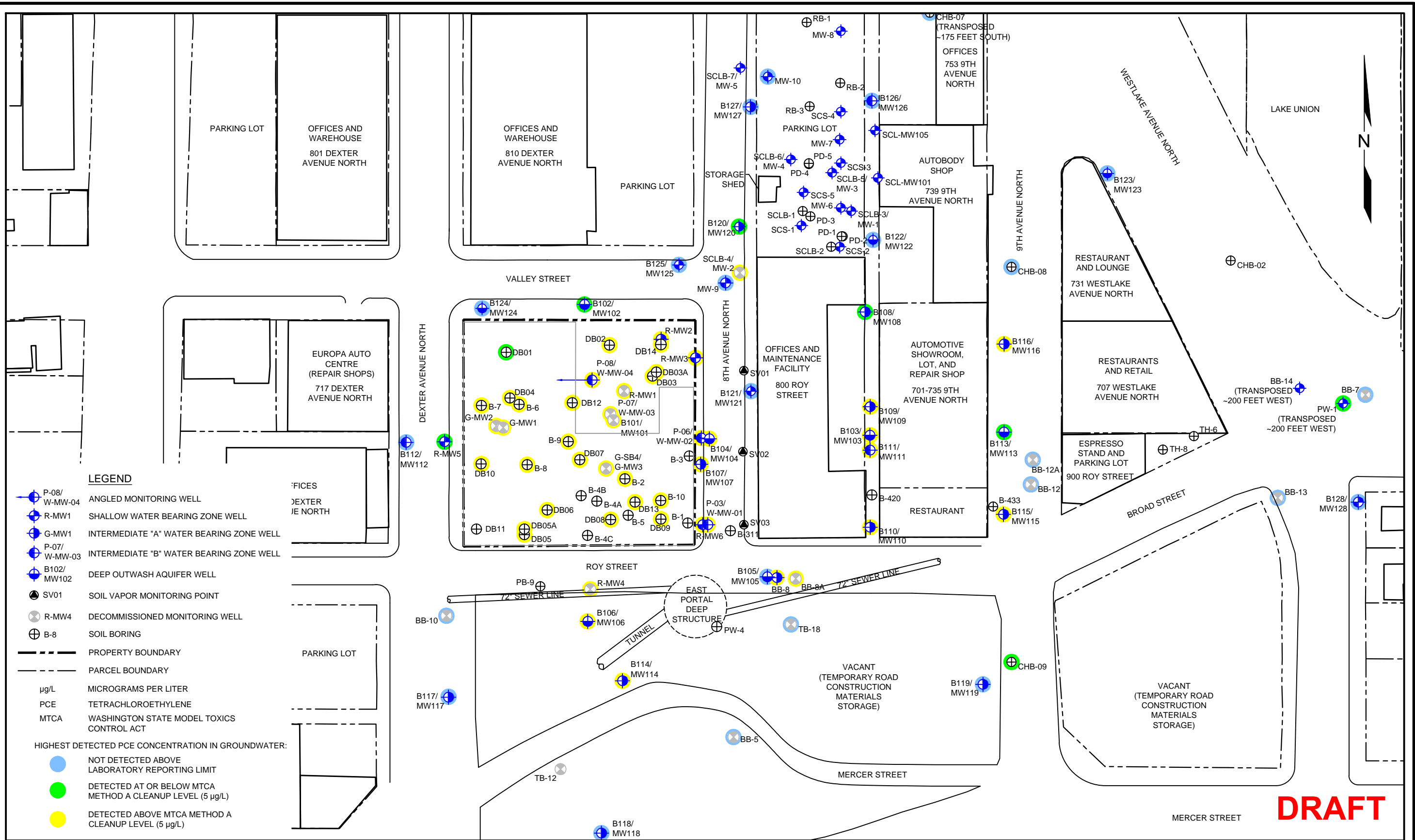


FIGURE 17
PCE CONCENTRATIONS IN SOIL

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LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING

- PROPERTY BOUNDARY
- PARCEL BOUNDARY

- MICROGRAMS PER LITER
- TETRACHLOROETHYLENE
- WASHINGTON STATE MODEL TOXICS CONTROL ACT

- HIGHEST DETECTED PCE CONCENTRATION IN GROUNDWATER:
- NOT DETECTED ABOVE LABORATORY REPORTING LIMIT
 - DETECTED AT OR BELOW MTCA METHOD A CLEANUP LEVEL (5 µg/L)
 - DETECTED ABOVE MTCA METHOD A CLEANUP LEVEL (5 µg/L)

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DATE: 01/15/14
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 CAD FILE: 0797-001_2015DCAP_GD_PCE

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

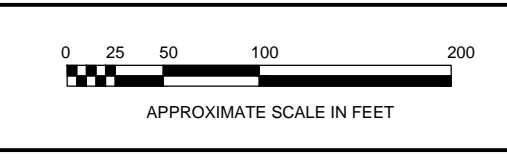
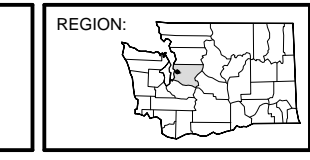
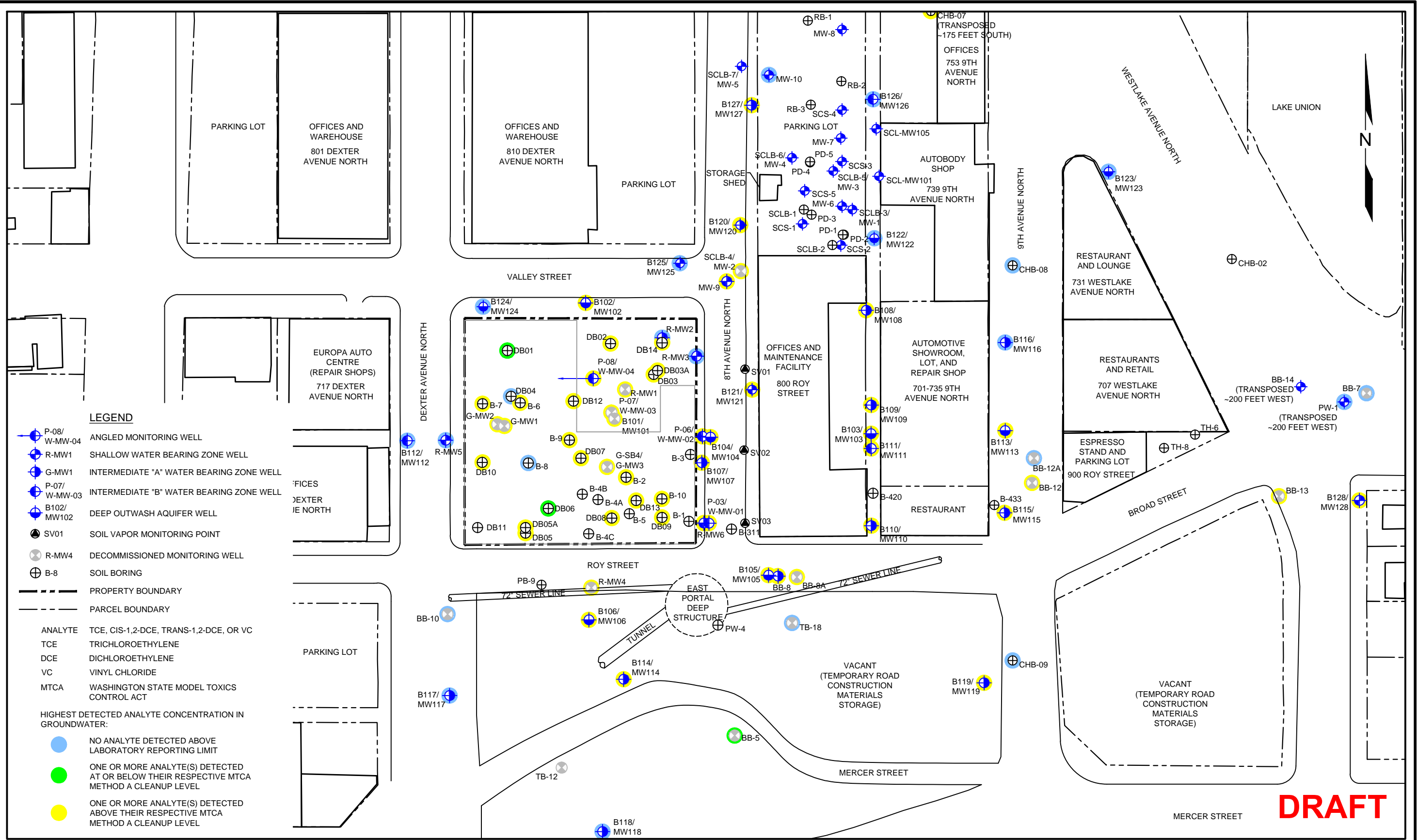


FIGURE 18
 PCE CONCENTRATIONS IN GROUNDWATER



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

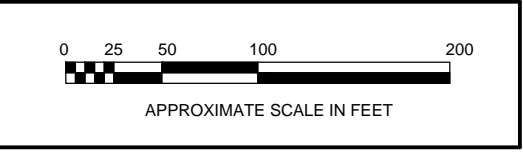
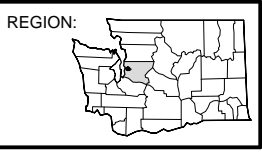
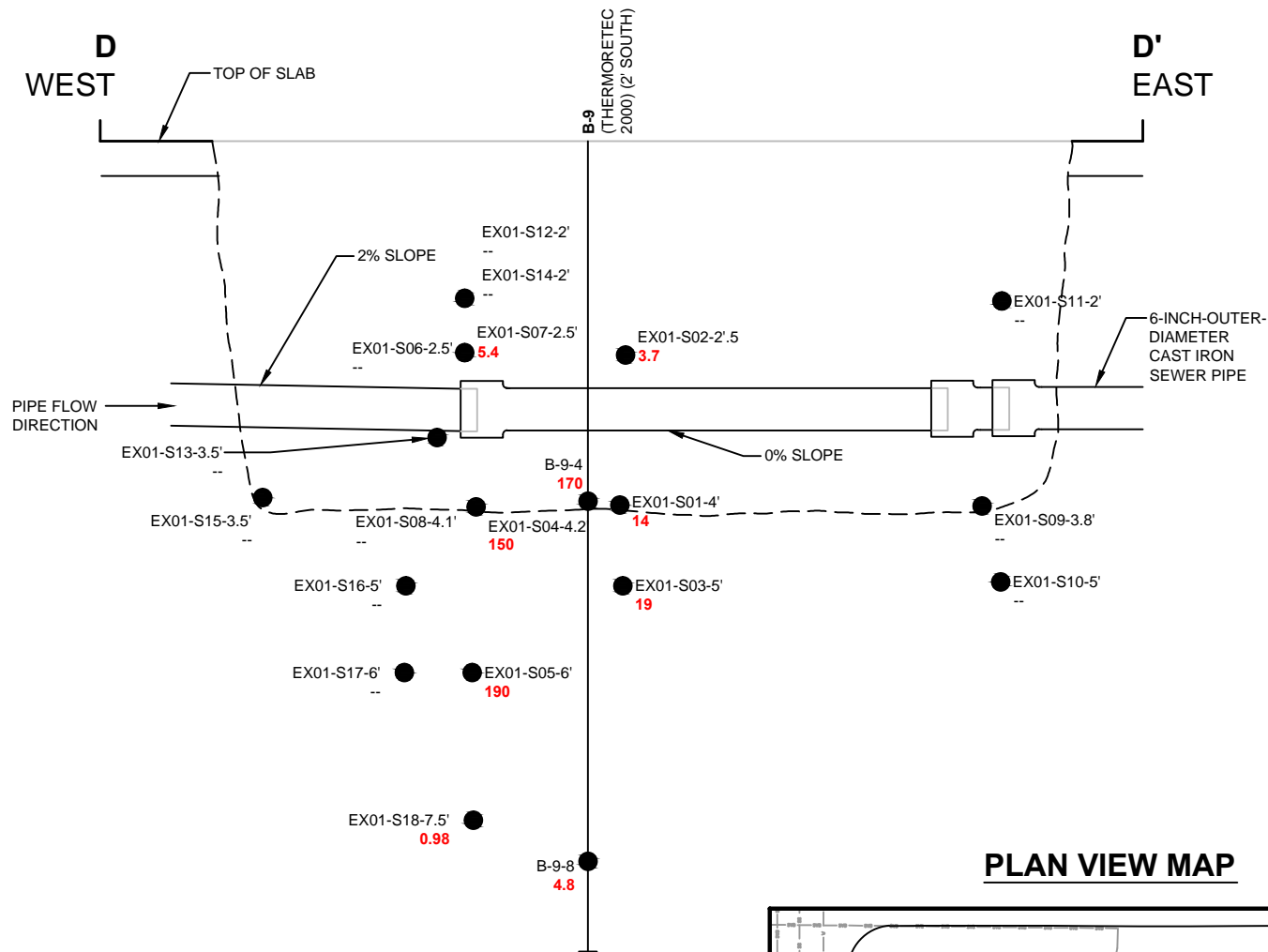
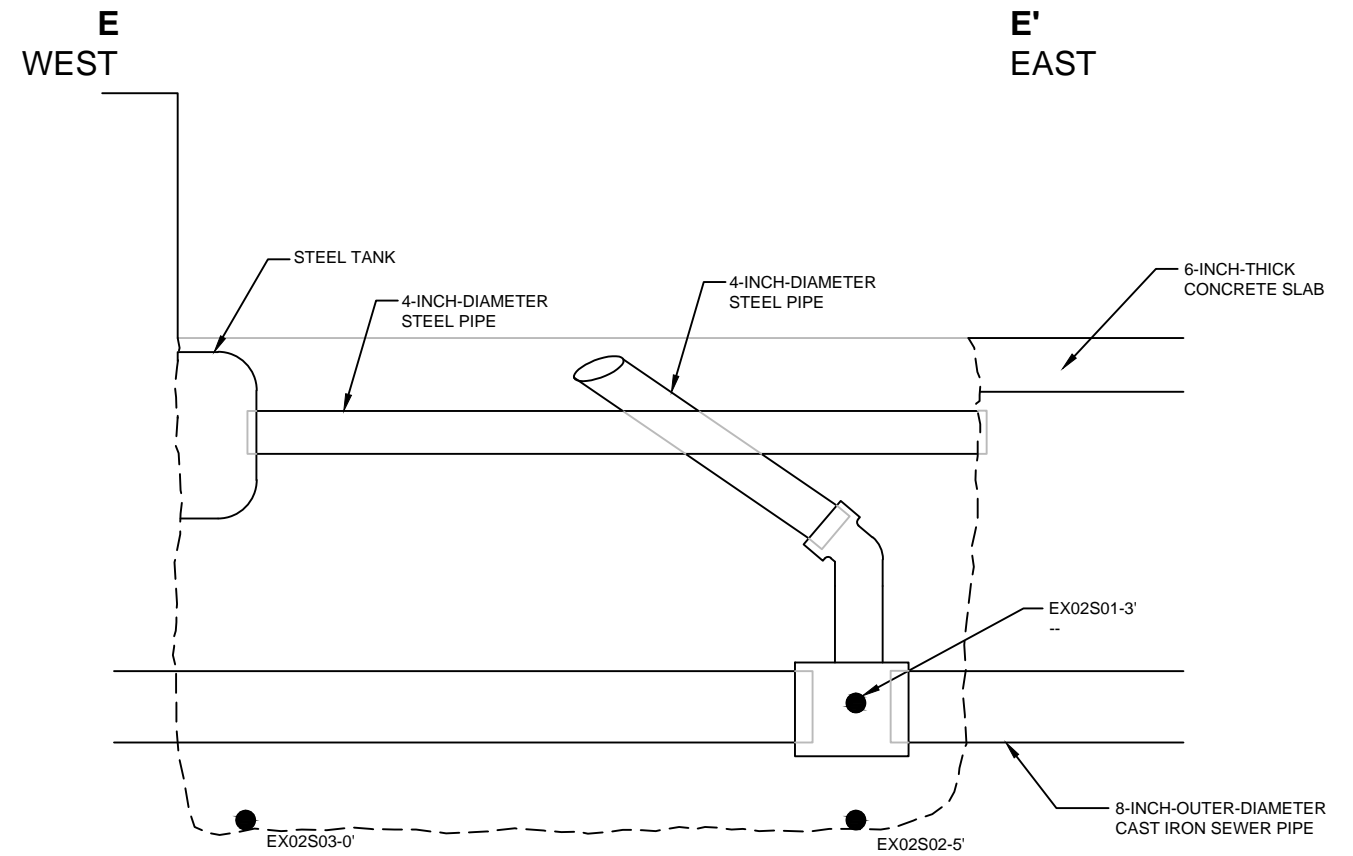


FIGURE 19
 TCE, CIS-1,2-DCE, TRANS-1,2-DCE, AND VC
 CONCENTRATIONS IN GROUNDWATER

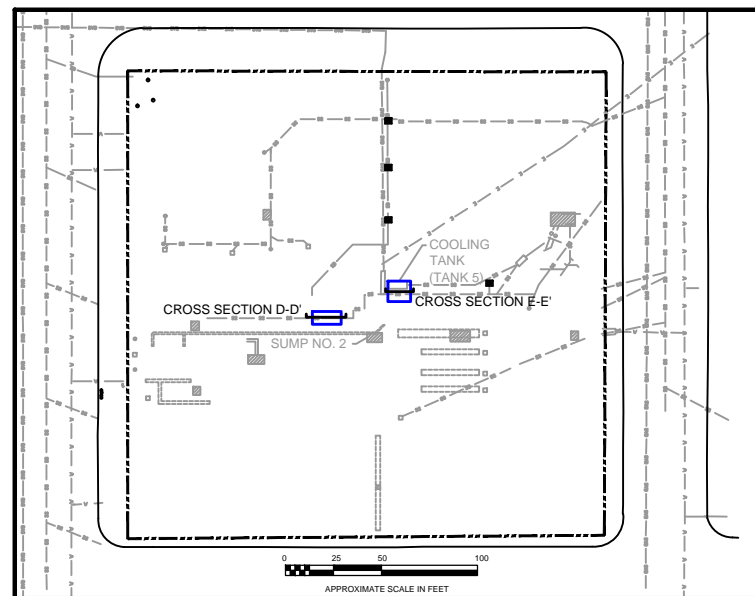
CROSS SECTION D-D'



CROSS SECTION E-E'



PLAN VIEW MAP



LEGEND

- EX01-S04-4' SOIL SAMPLE NUMBER AND LOCATION (SOUNDEARTH 2012)
- 5.4 PCE CONCENTRATION IN SOIL (MG/KG)
- ⊕ B-9 SOIL BORING (THERMORETEC 2000)
- MG/KG MILLIGRAMS PER KILOGRAM
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- NOT ANALYZED
- PCE TETRACHLOROETHYLENE
- RED REPORTED CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL FOR SOIL

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 CAD FILE: 0797-001_2015DCAP_SLEX

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

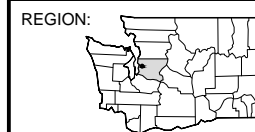
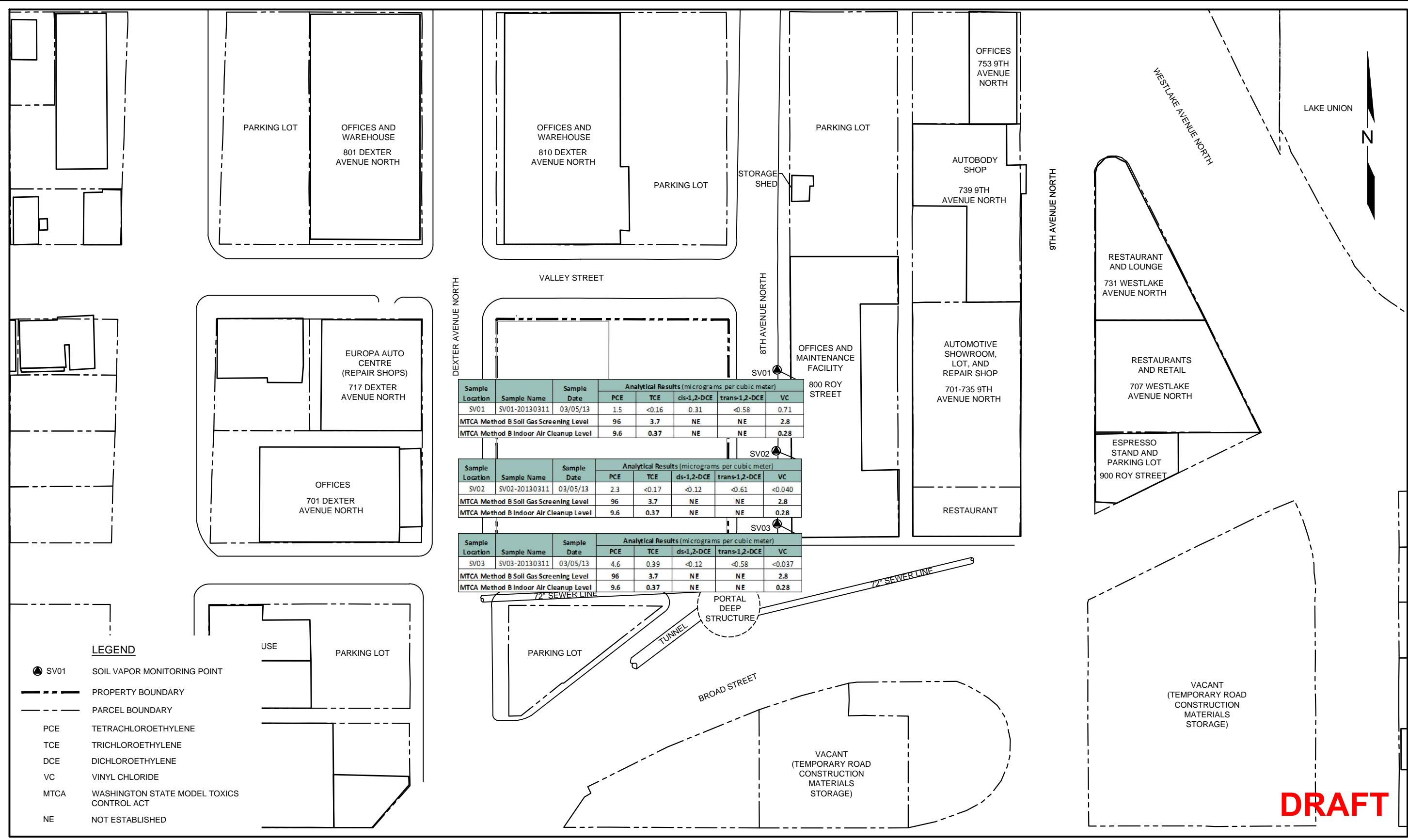


FIGURE 20
SEWER LINE EXCAVATION EX01

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Sample Location	Sample Name	Sample Date	Analytical Results (micrograms per cubic meter)				
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
SV01	SV01-20130311	03/05/13	1.5	<0.16	0.31	<0.58	0.71
MTCA Method B Soil Gas Screening Level			96	3.7	NE	NE	2.8
MTCA Method B Indoor Air Cleanup Level			9.6	0.37	NE	NE	0.28

Sample Location	Sample Name	Sample Date	Analytical Results (micrograms per cubic meter)				
			PCE	TCE	ds-1,2-DCE	trans-1,2-DCE	VC
SV02	SV02-20130311	03/05/13	2.3	<0.17	<0.12	<0.61	<0.040
MTCA Method B Soil Gas Screening Level			96	3.7	NE	NE	2.8
MTCA Method B Indoor Air Cleanup Level			9.6	0.37	NE	NE	0.28

Sample Location	Sample Name	Sample Date	Analytical Results (micrograms per cubic meter)				
			PCE	TCE	ds-1,2-DCE	trans-1,2-DCE	VC
SV03	SV03-20130311	03/05/13	4.6	0.39	<0.12	<0.58	<0.037
MTCA Method B Soil Gas Screening Level			96	3.7	NE	NE	2.8
MTCA Method B Indoor Air Cleanup Level			9.6	0.37	NE	NE	0.28

LEGEND

- SV01 SOIL VAPOR MONITORING POINT
- PROPERTY BOUNDARY
- - - PARCEL BOUNDARY
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- DCE DICHLOROETHYLENE
- VC VINYL CHLORIDE
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- NE NOT ESTABLISHED

USE PARKING LOT

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 CAD FILE: 0797-001_2015DCAP_SG

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

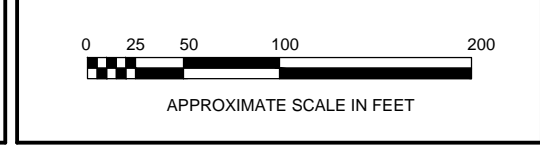
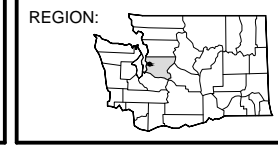
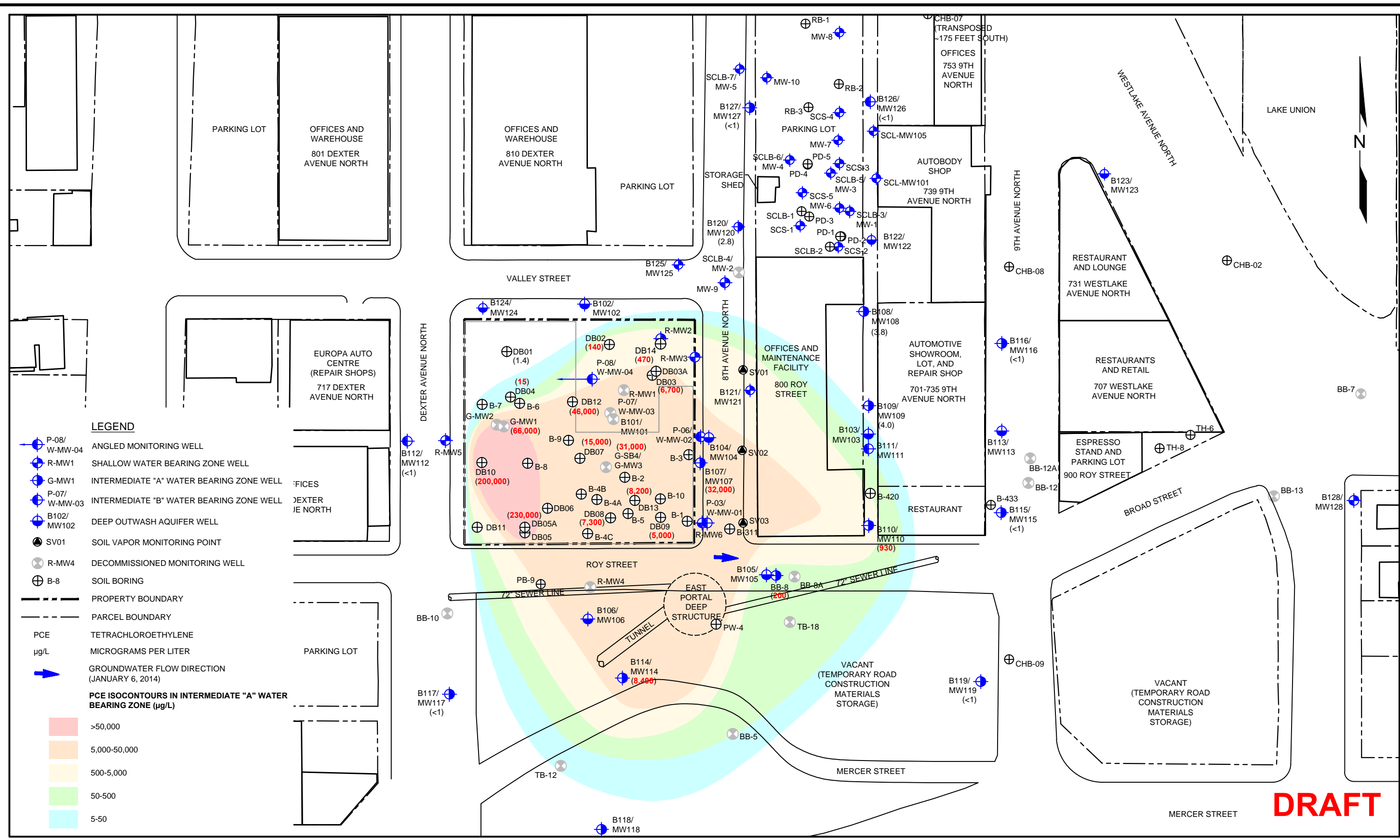


FIGURE 21
SOIL GAS ANALYTICAL RESULTS

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LEGEND

- ⊕ P-08/W-MW-04 ANGLED MONITORING WELL
- ⊕ R-MW1 SHALLOW WATER BEARING ZONE WELL
- ⊕ G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- ⊕ P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- ⊕ B102/MW102 DEEP OUTWASH AQUIFER WELL
- ⊕ SV01 SOIL VAPOR MONITORING POINT
- ⊕ R-MW4 DECOMMISSIONED MONITORING WELL
- ⊕ B-8 SOIL BORING

- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- PCE TETRACHLOROETHYLENE
- µg/L MICROGRAMS PER LITER
- ➔ GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)

PCE ISOCONTOURS IN INTERMEDIATE "A" WATER BEARING ZONE (µg/L)

- >50,000
- 5,000-50,000
- 500-5,000
- 50-500
- 5-50



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 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_ISO_INT_PCE

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

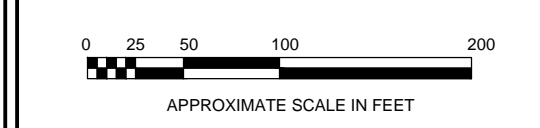
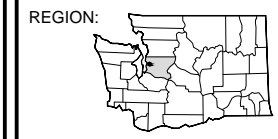
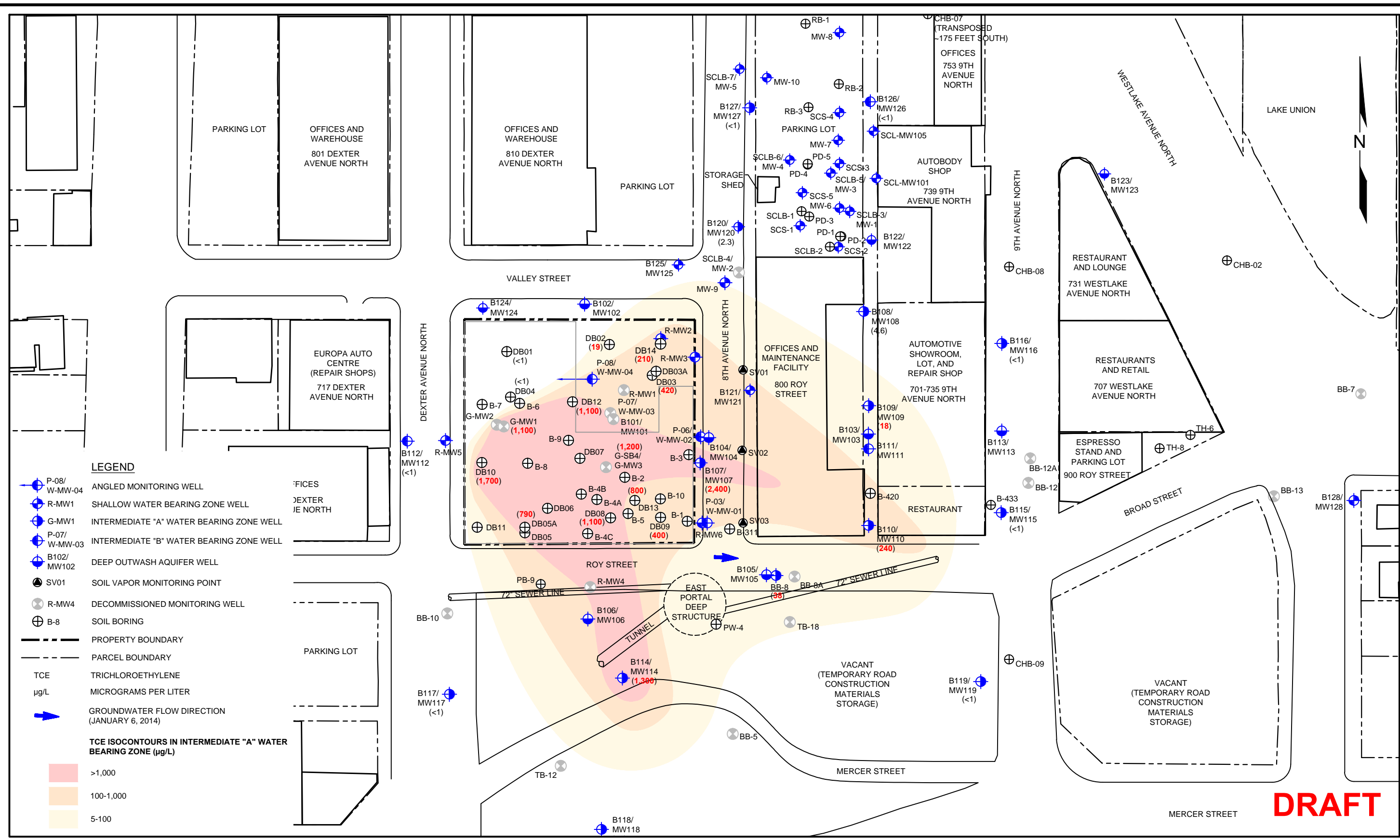


FIGURE 22
 PCE ISOCONTOURS IN INTERMEDIATE "A" WATER-BEARING ZONE (2013/2014)

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9/4/2015
 P:\0797 FRONTIER ENV MGMT\0797-001 700 DEXTER\TECHNICAL\CAD\2015 DCAP\0797-001_2015DCAP_ISO_INT_TCE.DWG



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 DRAWN BY: _____ BLR/JQC/NAC
 CHECKED BY: _____ CCC
 CAD FILE: _____ 0797-001_2015DCAP_ISO_INT_TCE

PROJECT NAME: _____ 700 DEXTER PROPERTY
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 CITY, STATE: _____ SEATTLE, WASHINGTON

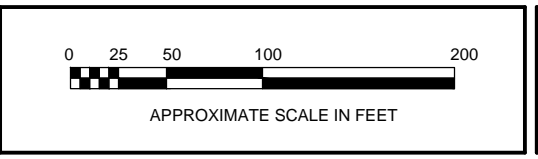
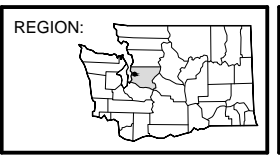
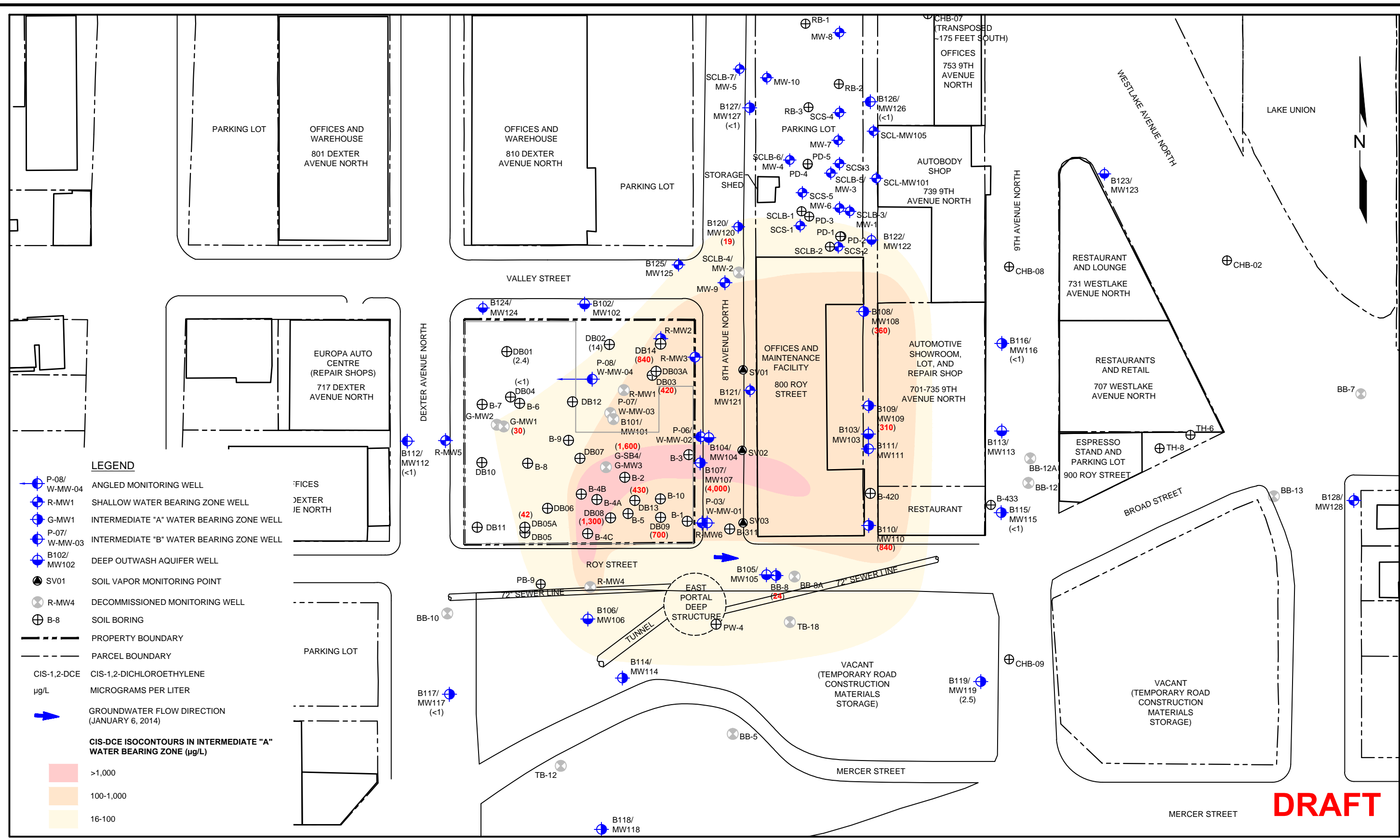


FIGURE 23
 TCE ISOCONTOURS IN
 INTERMEDIATE "A" WATER-BEARING ZONE
 (2013/2014)

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DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_ISO_INT_CIS

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

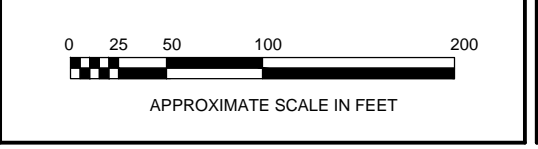
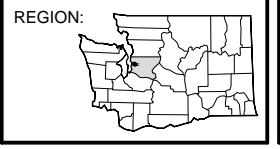
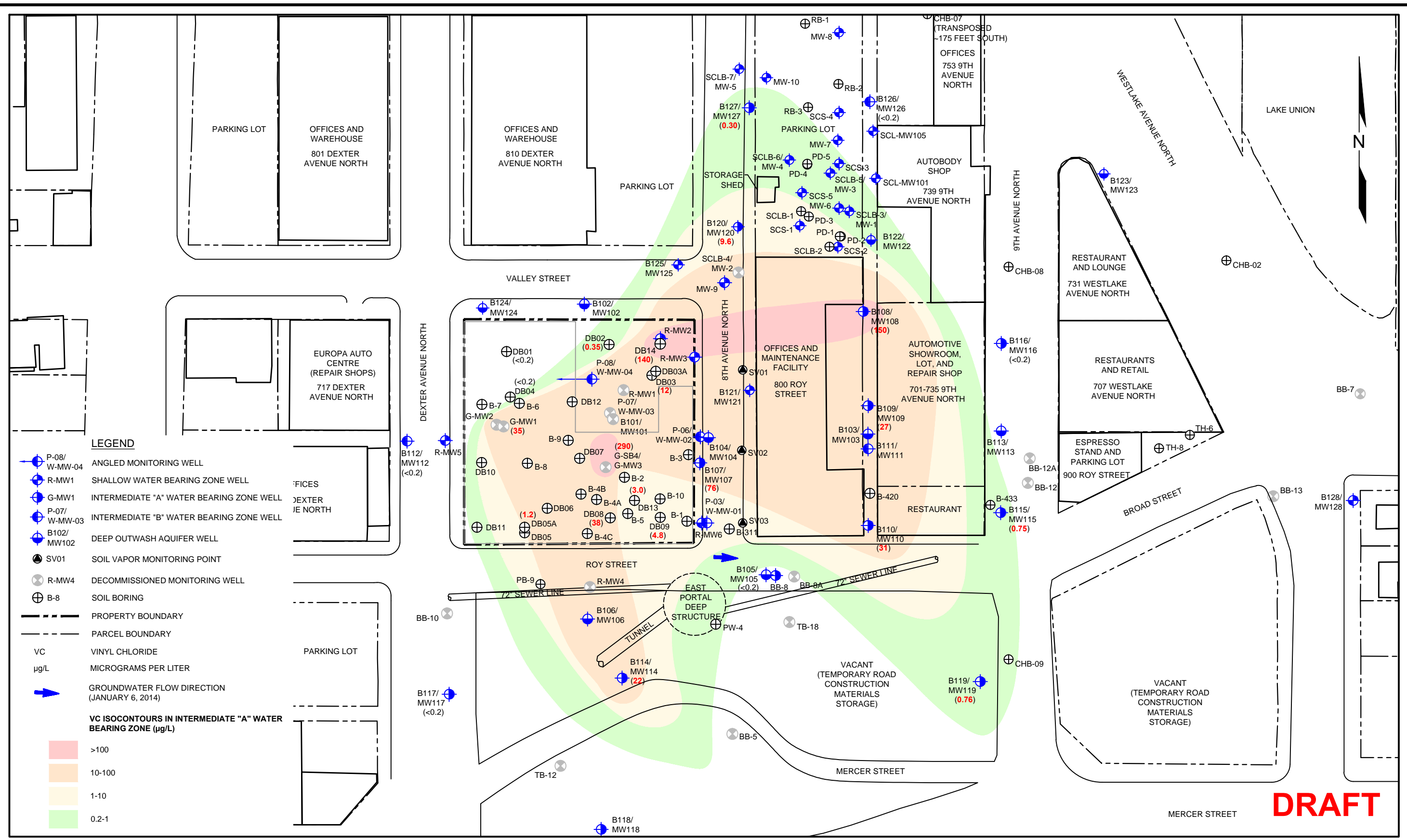


FIGURE 24
 CIS-1,2-DCE ISOCONTOURS IN INTERMEDIATE "A" WATER-BEARING ZONE (2013/2014)

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9/4/2015
 P:\0797 FRONTIER ENV MGMT\0797-001 700 DEXTER\TECHNICAL\CAD\2015 DCAP\0797-001_2015DCAP_ISO_INT_VC.DWG



LEGEND

- ⊕ P-08/
W-MW-04 ANGLED MONITORING WELL
- ⊕ R-MW1 SHALLOW WATER BEARING ZONE WELL
- ⊕ G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- ⊕ P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- ⊕ B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- ⊕ R-MW4 DECOMMISSIONED MONITORING WELL
- ⊕ B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- VC VINYL CHLORIDE
- µg/L MICROGRAMS PER LITER
- ➔ GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)

VC ISOCONTOURS IN INTERMEDIATE "A" WATER BEARING ZONE (µg/L)

- >100
- 10-100
- 1-10
- 0.2-1



DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_ISO_INT_VC

PROJECT NAME: 700 DEXTER PROPERTY
 PROJECT NUMBER: 0797-001
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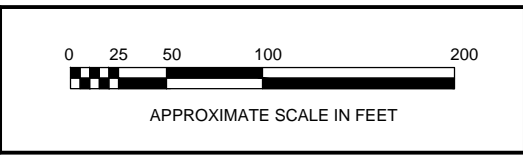
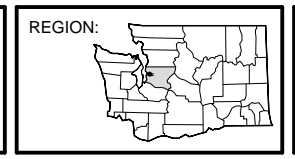
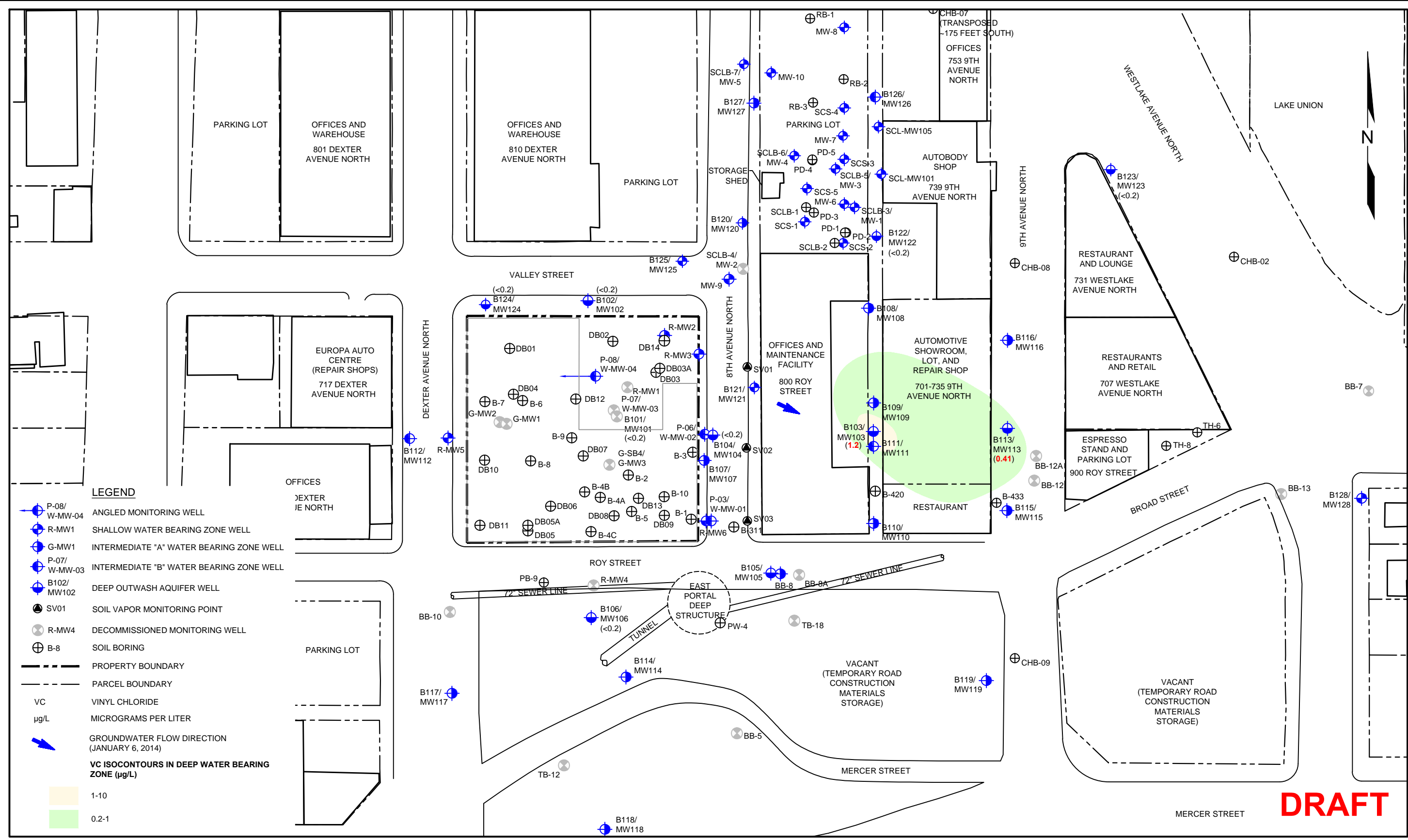


FIGURE 25
 VC ISOCONTOURS IN
 INTERMEDIATE "A" WATER-BEARING ZONE
 (2013/2014)

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LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- VC VINYL CHLORIDE
- µg/L MICROGRAMS PER LITER
- GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)
- VC ISOCONTOURS IN DEEP WATER BEARING ZONE (µg/L)
- 1-10
- 0.2-1



DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_ISO_DEEP_VC

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

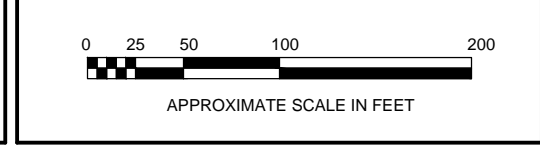
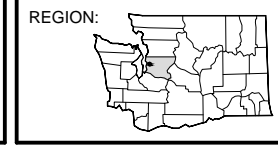
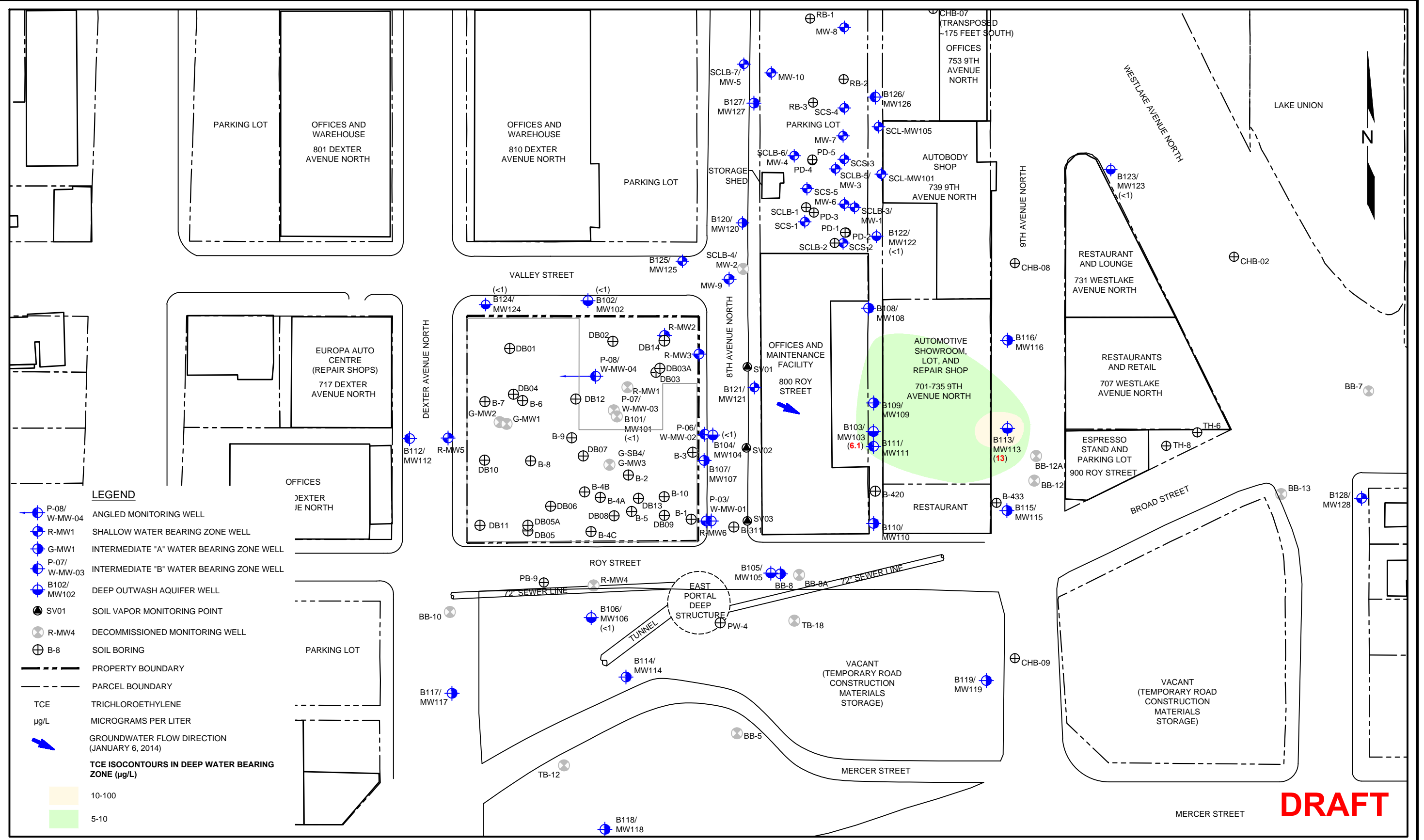


FIGURE 27
 VC ISOCONTOURS IN DEEP WATER-BEARING ZONE (2013/2014)

DRAFT



LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- TCE MICROGRAMS PER LITER
- 10-100
- 5-10

TCE ISOCONTOURS IN DEEP WATER BEARING ZONE (µg/L)

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DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_ISO_DEEP_TCE

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

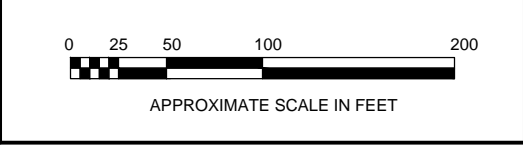
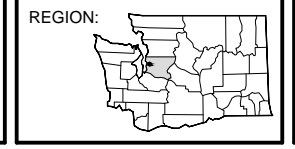
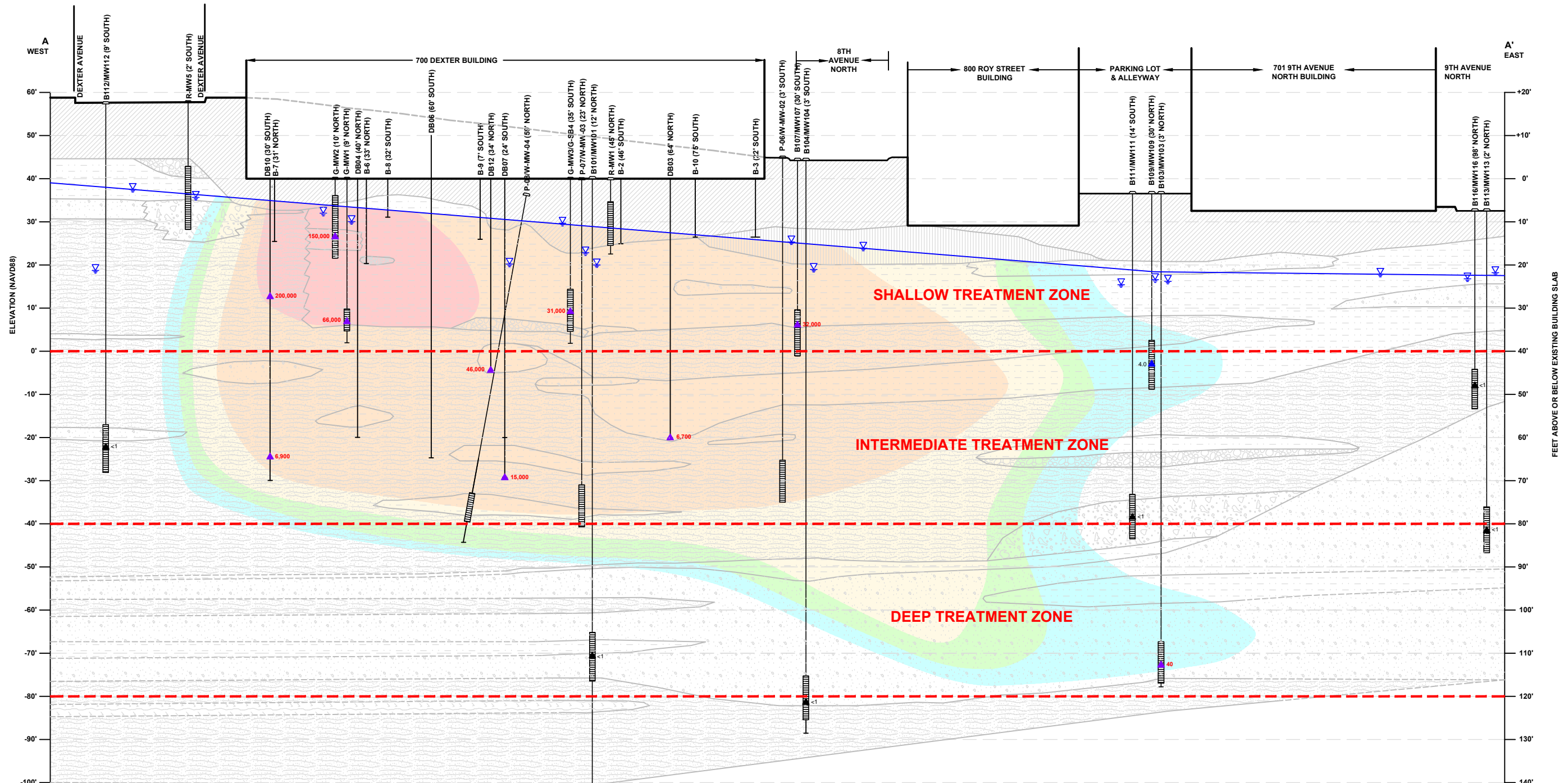


FIGURE 26
 TCE ISOCONTOURS IN DEEP WATER-BEARING ZONE (2013/2014)



LEGEND

SM-ML	SM: SILTY SANDS, SAND - CLAY MIXTURES	SP-GP: POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	PCE: TETRACHLOROETHYLENE	<p>PCE ISOCONTOURS IN GROUNDWATER (µg/L)</p> <ul style="list-style-type: none"> >50,000 5,000-50,000 500-5,000 50-500 5-50
SM-MH	GW: WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	GM: SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES	MTCA: WASHINGTON STATE MODEL TOXICS CONTROL ACT	
SM-GM	FILL	GROUNDWATER DEPTH (MARCH 29, 2013)	µg/L: MICROGRAMS PER LITER	
SP: POORLY GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES	MONITORING WELL WITH SCREEN INTERVAL	PCE CONCENTRATIONS IN RECONNAISSANCE OR LOW FLOW GROUNDWATER SAMPLES (µg/L): <ul style="list-style-type: none"> ▲ CONCENTRATION BELOW LABORATORY REPORTING LIMIT ▲ CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL ▲ CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL 		
SP-SM	INTERMEDIATE GROUNDWATER LEVEL (MARCH 29, 2013)			
ML: INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS				

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DATE: 07/24/2013
 DRAWN BY: BLR/NAC/JQC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_XAA_PCE

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

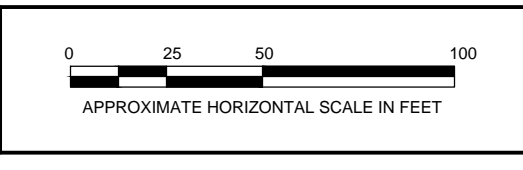
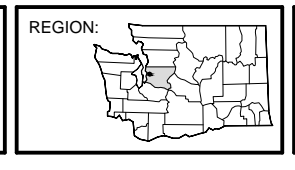
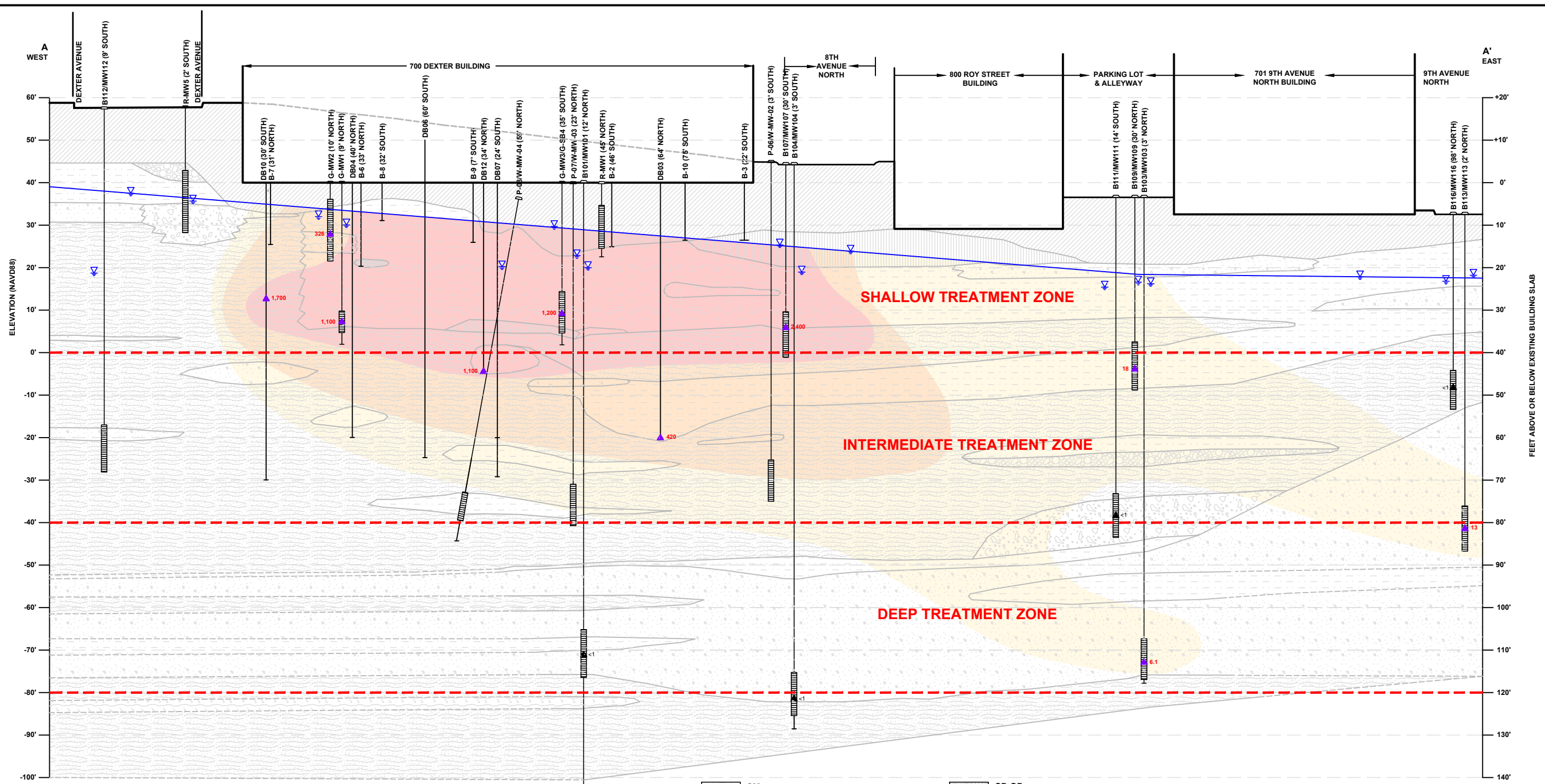


FIGURE 28
 CROSS SECTION A - A'
 SHOWING PCE ISOCONTOURS
 (2013/2014)



LEGEND

SM-ML	SM: SILTY SANDS, SAND - CLAY MIXTURES	SP-GP: POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	TCE TRICHLOROETHYLENE	TCE ISOCONTOURS IN GROUNDWATER (µg/L)
SM-MH	GW: WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	GM: SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES	MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT	
SM-GM	FILL	GROUNDWATER DEPTH (MARCH 29, 2013)	µg/L MICROGRAMS PER LITER	
SP: POORLY GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES	(12' NORTH) DISTANCE OF BORING/WELL FROM CROSS SECTION LINE	MONITORING WELL WITH SCREEN INTERVAL	TCE CONCENTRATIONS IN RECONNAISSANCE OR LOW FLOW GROUNDWATER SAMPLES (µg/L):	
SP-SM	INTERMEDIATE GROUNDWATER LEVEL (MARCH 29, 2013)	CONCENTRATION BELOW LABORATORY REPORTING LIMIT	CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL	
ML: INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS		CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL		

DRAFT



DATE: 07/24/2013
 DRAWN BY: BLR/NAC/JQC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_XAA_TCE

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

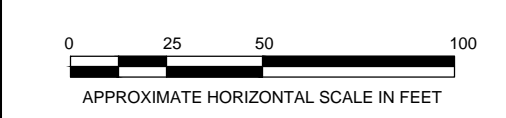
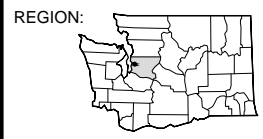
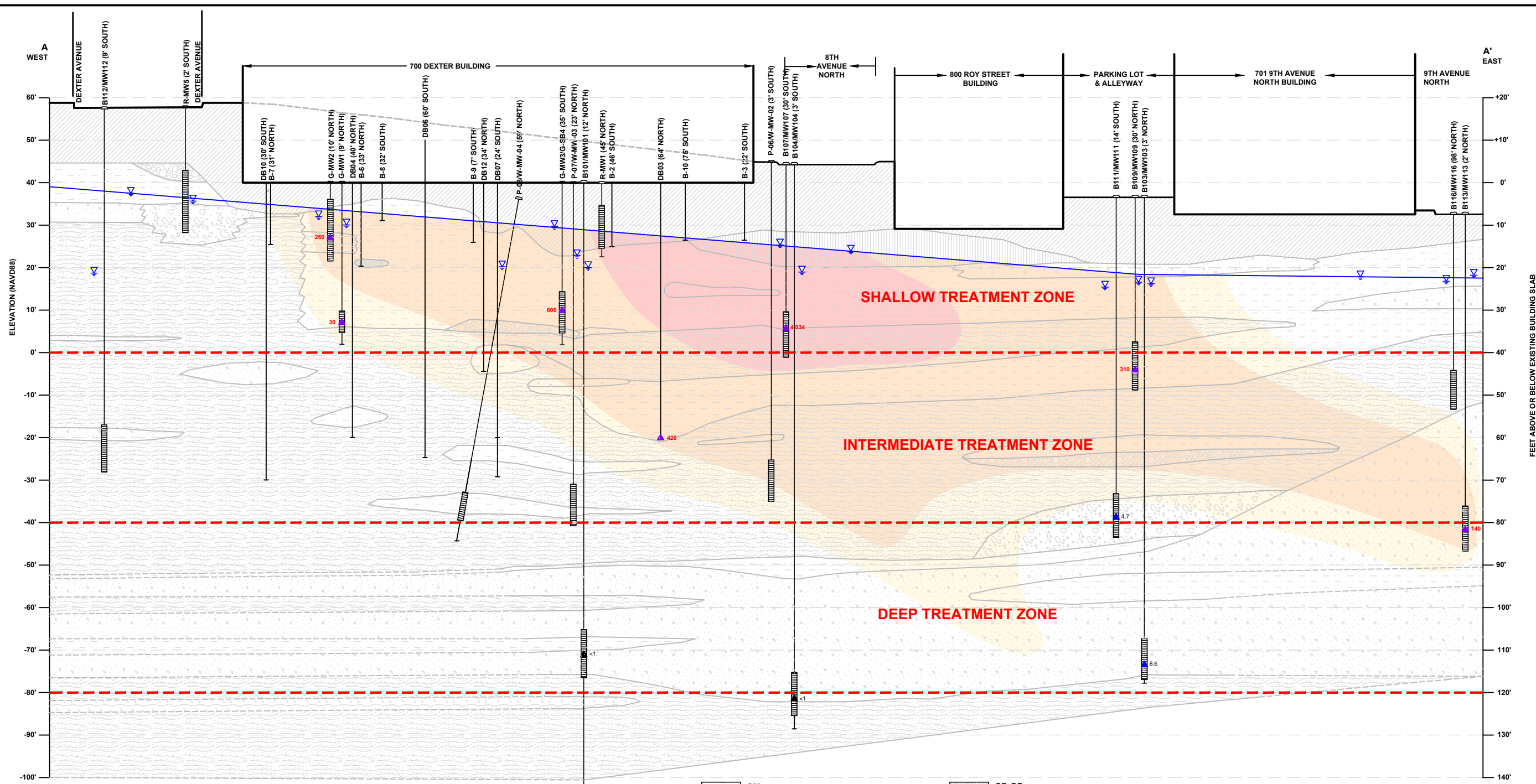


FIGURE 29
 CROSS SECTION A - A'
 SHOWING TCE ISOCONTOURS
 (2013/2014)



LEGEND

SM-ML	SM: SILTY SANDS, SAND - CLAY MIXTURES	SP-GP: POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	CIS-1,2-DCE	CIS-1,2-DICHLOROETHYLENE	 CIS-1,2-DCE ISOCONTOURS IN GROUNDWATER (µg/L)
SM-MH	GW: WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	GM: SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES	MTCA	WASHINGTON STATE MODEL TOXICS CONTROL ACT	
SM-GM	FILL	GROUNDWATER DEPTH (MARCH 29, 2013)	µg/L	MICROGRAMS PER LITER	
SP: POORLY GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES	(12' NORTH) DISTANCE OF BORING/WELL FROM CROSS SECTION LINE	MONITORING WELL WITH SCREEN INTERVAL	CIS-1,2-DCE CONCENTRATIONS IN RECONNAISSANCE OR LOW FLOW GROUNDWATER SAMPLES (µg/L):		
SP-SM	INTERMEDIATE GROUNDWATER LEVEL (MARCH 29, 2013)	CONCENTRATION BELOW LABORATORY REPORTING LIMIT	▲		
ML: INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS		CONCENTRATION AT OR BELOW MTCA METHOD A CLEANUP LEVEL	▲		
		CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL	▲		

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DATE: 07/24/2013
 DRAWN BY: BLR/NAC/JQC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_XAA_CIS

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

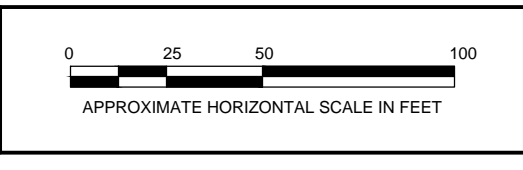
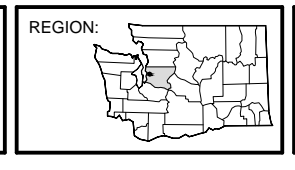
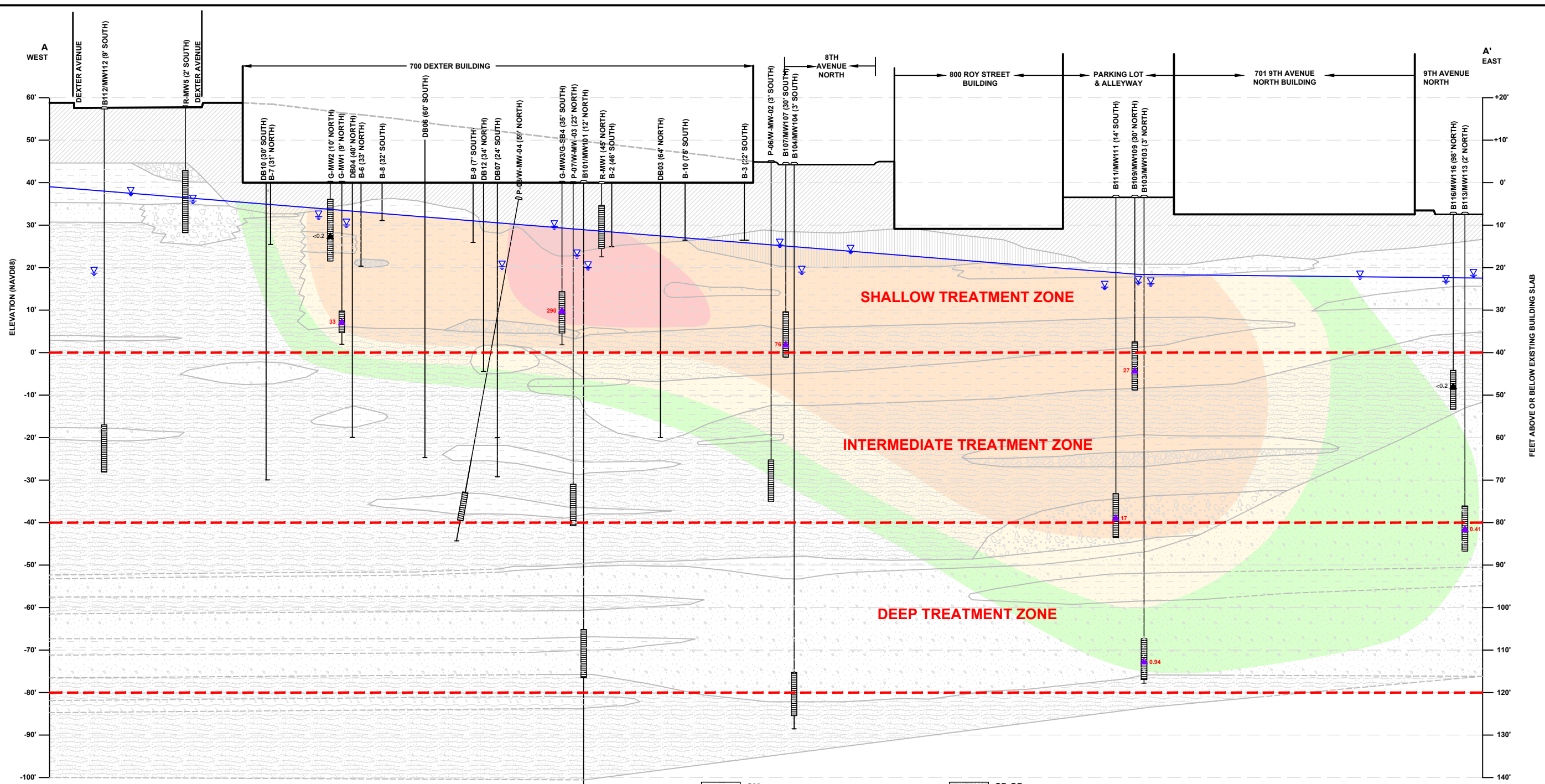


FIGURE 30
 CROSS SECTION A - A'
 SHOWING CIS-1,2-DCE ISOCONTOURS
 (2013/2014)



LEGEND

SM-ML	SM: SILTY SANDS, SAND - CLAY MIXTURES	SP-GP: POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	VC VINYL CHLORIDE	<p>VC ISOCONTOURS IN GROUNDWATER (µg/L)</p> <ul style="list-style-type: none"> >100 10-100 1-10 0.2-1
SM-MH	GW: WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES	GM: SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES	MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT	
SM-GM	FILL	GROUNDWATER DEPTH (MARCH 29, 2013)	µg/L MICROGRAMS PER LITER	
SP: POORLY GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES	MONITORING WELL WITH SCREEN INTERVAL	VC CONCENTRATIONS IN RECONNAISSANCE OR LOW FLOW GROUNDWATER SAMPLES (µg/L):		
SP-SM	INTERMEDIATE GROUNDWATER LEVEL (MARCH 29, 2013)	CONCENTRATION BELOW LABORATORY REPORTING LIMIT (black triangle), AT OR BELOW MTCA METHOD A CLEANUP LEVEL (blue triangle), EXCEEDS MTCA METHOD A CLEANUP LEVEL (purple triangle)		
ML: INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS				

DRAFT



DATE: 07/24/2013
 DRAWN BY: BLR/NAC/JQC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_XAA_VC

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

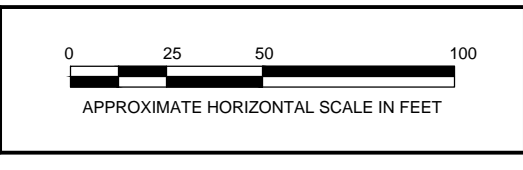
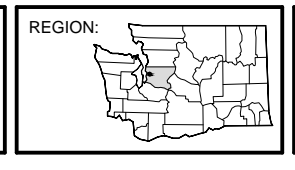
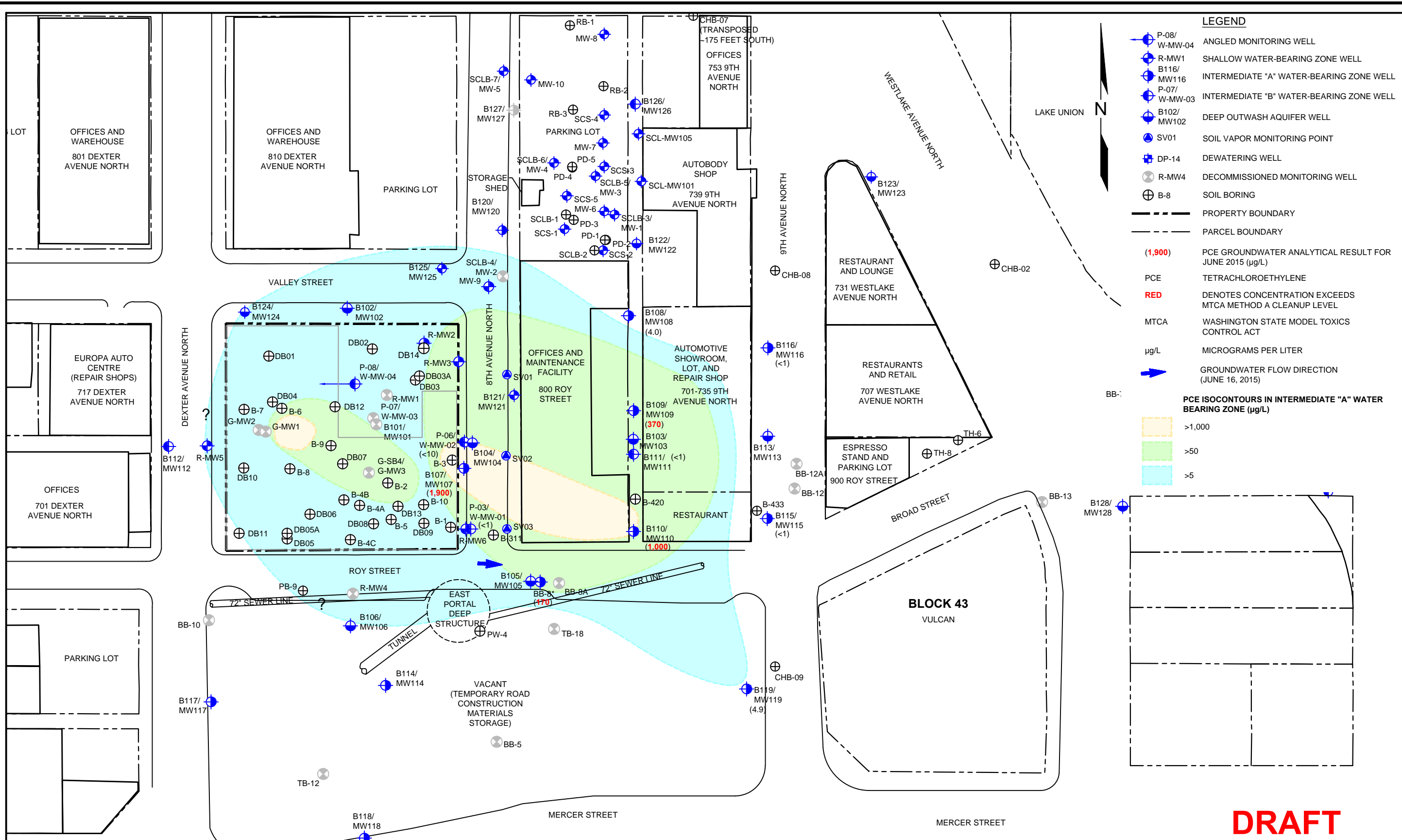


FIGURE 31
 CROSS SECTION A - A'
 SHOWING VC ISOCONTOURS
 (2013/2014)

P:\0797 FRONTIER ENV MGMT\0797-001 700 DEXTER\TECHNICAL\CAD\2015 DCAP\0797-001_2015DCAP_FIG32.DWG 9/28/2015



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DATE: 07/16/15
 DRAWN BY: NAC
 CHECKED BY: OKP
 CAD FILE: 0797-001_2015DCAP_PCE_B43

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

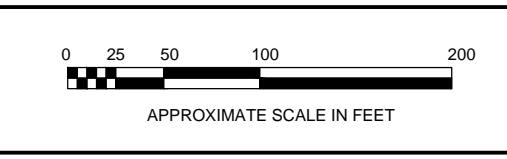
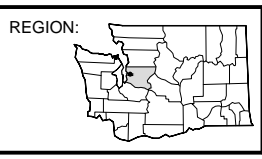
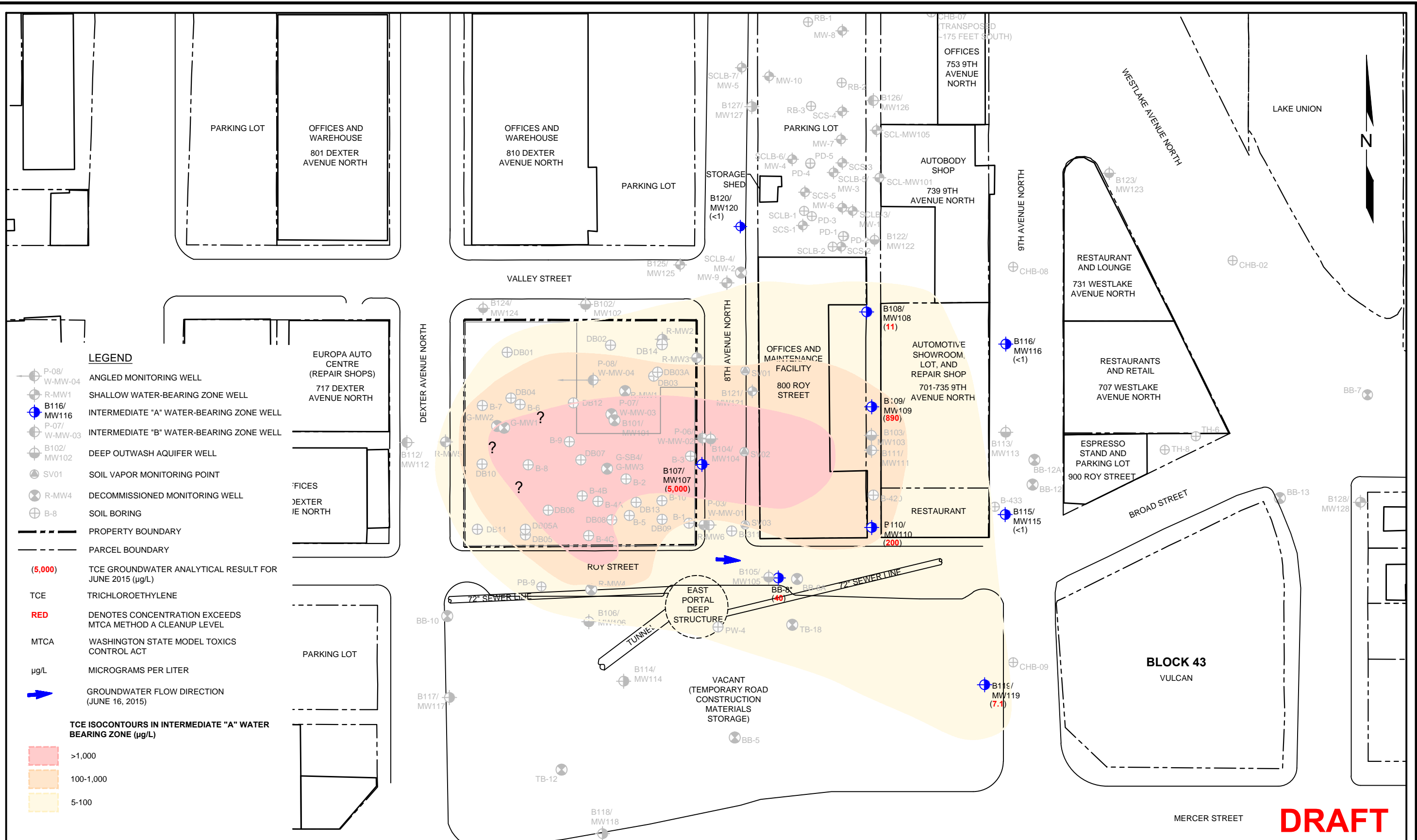


FIGURE 32
 PCE ISOCONTOURS IN INTERMEDIATE "A" WATER BEARING ZONE (2015)

WWW.SOUNDEARTHINC.COM



LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER-BEARING ZONE WELL
- B116/
MW116 INTERMEDIATE "A" WATER-BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER-BEARING ZONE WELL
- B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

- (5,000) TCE GROUNDWATER ANALYTICAL RESULT FOR JUNE 2015 (µg/L)
- TCE TRICHLOROETHYLENE
- RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- µg/L MICROGRAMS PER LITER
- GROUNDWATER FLOW DIRECTION (JUNE 16, 2015)

- TCE ISOCONTOURS IN INTERMEDIATE "A" WATER BEARING ZONE (µg/L)**
- >1,000
 - 100-1,000
 - 5-100



DATE: 6/23/15
 DRAWN BY: JQC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_GW_ISO_TCE

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

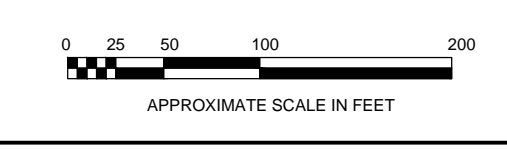
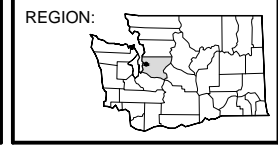
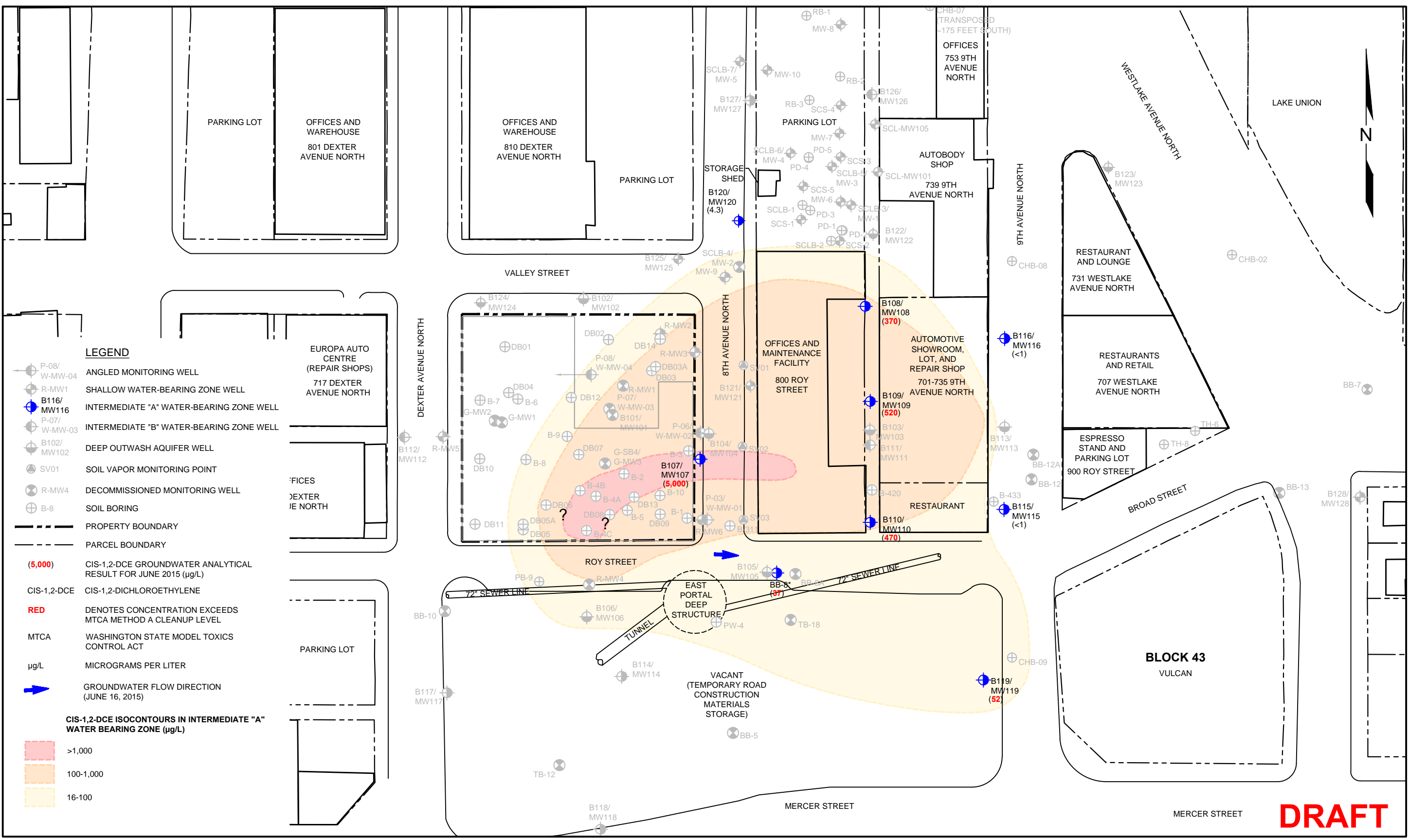


FIGURE 33
 TCE ISOCONTOURS IN INTERMEDIATE "A" WATER-BEARING ZONE (2015)

DRAFT



LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER-BEARING ZONE WELL
- B116/
MW116 INTERMEDIATE "A" WATER-BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER-BEARING ZONE WELL
- B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- (5,000) CIS-1,2-DCE GROUNDWATER ANALYTICAL RESULT FOR JUNE 2015 (µg/L)
- CIS-1,2-DCE CIS-1,2-DICHLOROETHYLENE
- RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- µg/L MICROGRAMS PER LITER
- GROUNDWATER FLOW DIRECTION (JUNE 16, 2015)

CIS-1,2-DCE ISOCONTOURS IN INTERMEDIATE "A" WATER BEARING ZONE (µg/L)

- >1,000
- 100-1,000
- 16-100

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DATE: 6/23/15
 DRAWN BY: JQC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_GW_ISO_CIS

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

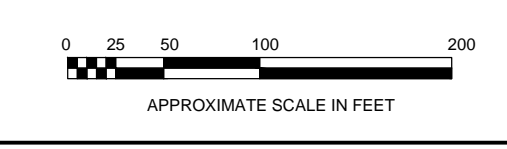
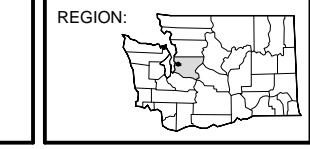
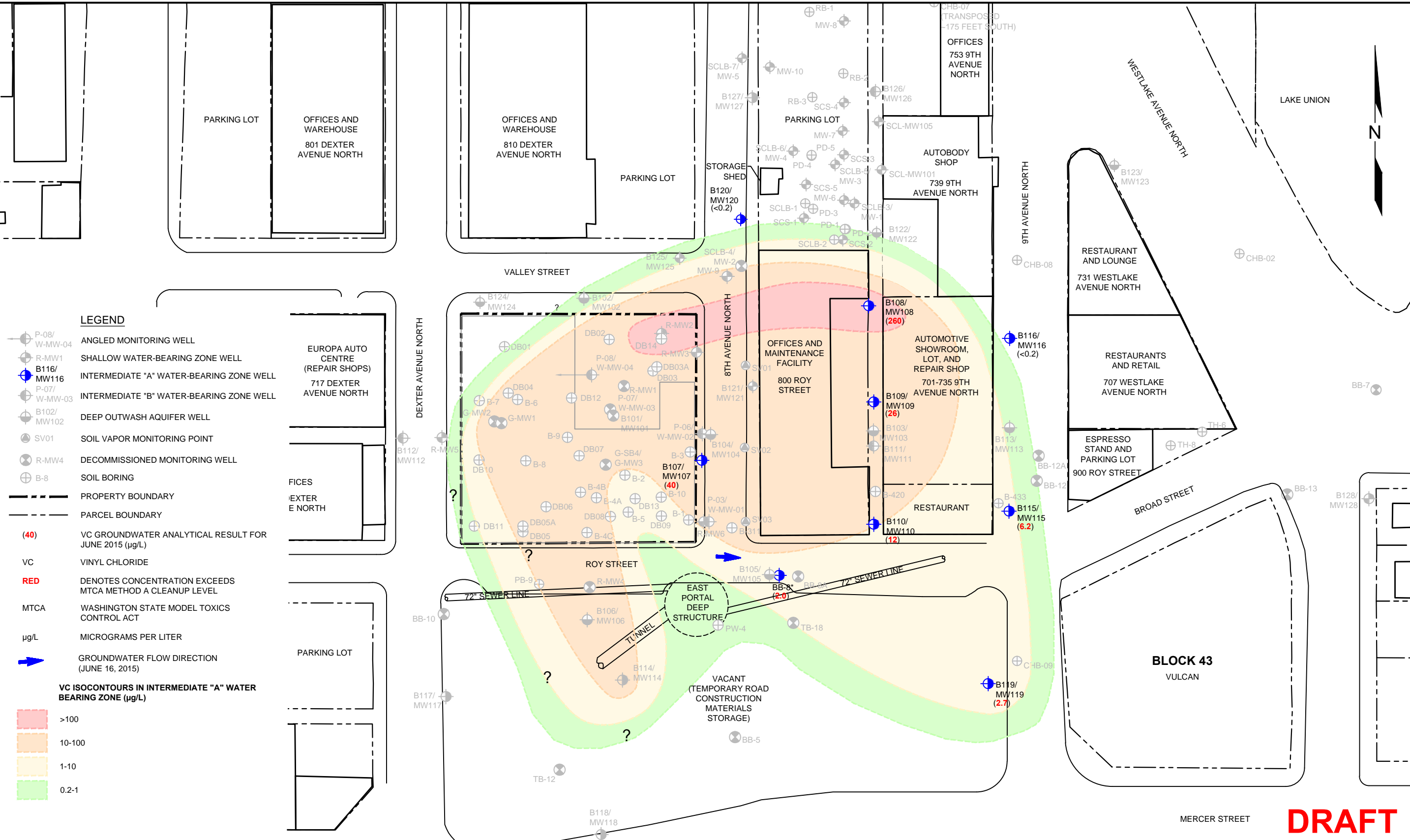


FIGURE 34
 CIS-1,2-DCE ISOCONTOURS IN INTERMEDIATE "A" WATER-BEARING ZONE (JUNE 2015)



LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER-BEARING ZONE WELL
- B116/
MW116 INTERMEDIATE "A" WATER-BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER-BEARING ZONE WELL
- B102/
MW102 DEEP OUTWASH AQUIFER WELL
- SV01 SOIL VAPOR MONITORING POINT
- R-MW4 DECOMMISSIONED MONITORING WELL
- B-8 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- (40) VC GROUNDWATER ANALYTICAL RESULT FOR JUNE 2015 (µg/L)
- VC VINYL CHLORIDE
- RED DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- µg/L MICROGRAMS PER LITER
- GROUNDWATER FLOW DIRECTION (JUNE 16, 2015)

VC ISOCONTOURS IN INTERMEDIATE "A" WATER BEARING ZONE (µg/L)

- >100
- 10-100
- 1-10
- 0.2-1

EUROPA AUTO CENTRE (REPAIR SHOPS)
717 DEXTER AVENUE NORTH

FICES
EXTER
E NORTH

PARKING LOT

DRAFT



DATE: 6/23/15
 DRAWN BY: JQC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_GW_ISO_VC

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

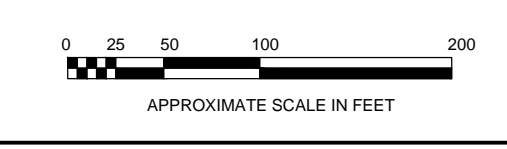
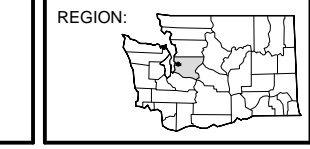
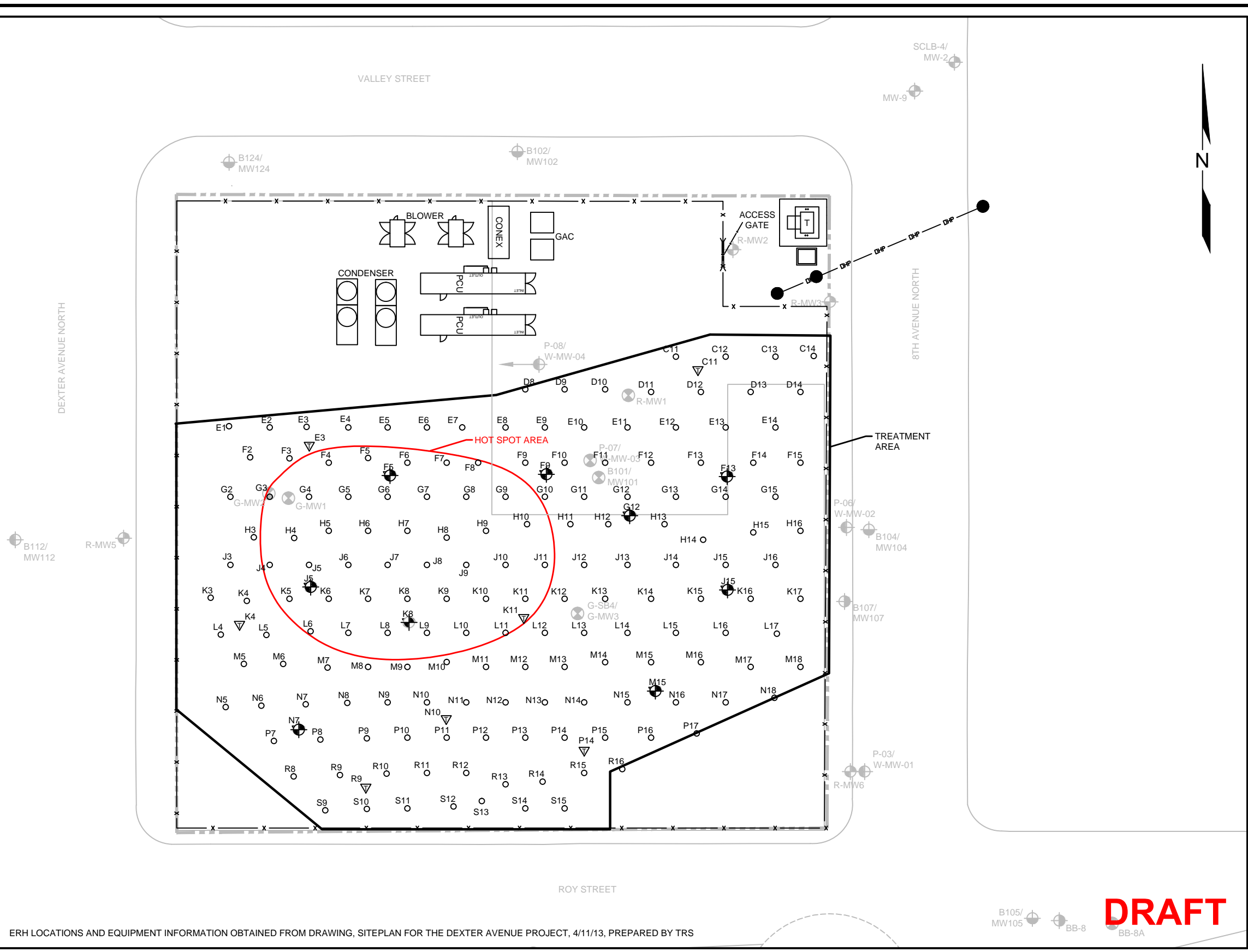


FIGURE 35
 VC ISOCONTOURS IN INTERMEDIATE "A" WATER-BEARING ZONE (2015)

9/4/2015
P:0797 FRONTIER ENV MGMT\0797-001 700 DEXTER\TECHNICAL\CAD\2015 DCA\0797-001_2015DCAP_ERH.DWG

LEGEND

- POWER POLE
- ERH/SVE HOT SPOT AREA - VADOSE ZONE SOIL WITH PCE CONCENTRATIONS ABOVE 14 mg/kg (30-40 FEET NAVD88)
- ERH/SVE TREATMENT AREA - GROUNDWATER WITH PCE CONCENTRATIONS ABOVE 5,000 µg/L (0-40 FEET NAVD88)
- DHP OVERHEAD POWER LINE
- x FENCE
- N16 ELECTRODE/VAPOR RECOVERY POINT
- ▽ M15 TEMPERATURE MONITORING POINT
- ERH ELECTRICAL RESISTANCE HEATING
- SVE SOIL VAPOR EXTRACTION
- PCE TETRACHLOROETHYLENE
- mg/kg MILLIGRAMS PER KILOGRAM
- µg/L MICROGRAMS PER LITER
- T TRANSFORMER
- GAC GRANULAR ACTIVATED CARBON
- PCU POWER CONTROL UNIT
- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/
MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY



ERH LOCATIONS AND EQUIPMENT INFORMATION OBTAINED FROM DRAWING, SITEPLAN FOR THE DEXTER AVENUE PROJECT, 4/11/13, PREPARED BY TRS

DRAFT



DATE: 07/24/13
 DRAWN BY: NAC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_ERH

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

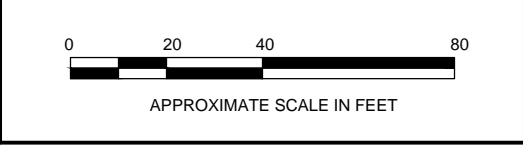
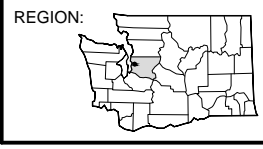


FIGURE 36
 CONCEPTUAL SITE LAYOUT
 FOR ERH AND SVE SYSTEM

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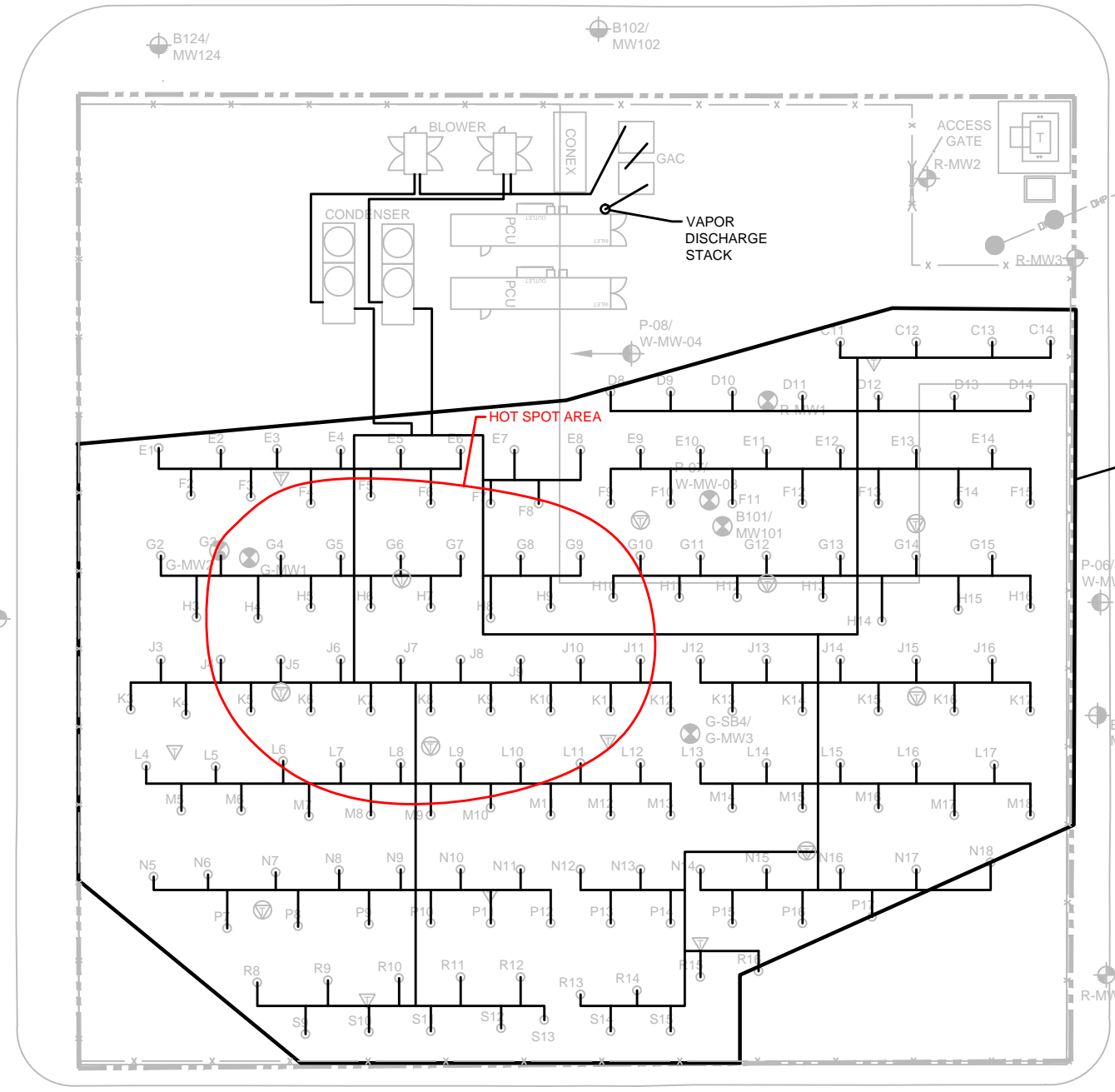
9/4/2015

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LEGEND

- POWER POLE
- ERH/SVEHOT SPOT AREA - VADOSE ZONE SOIL WITH PCE CONCENTRATIONS ABOVE 14 mg/kg (30-40 FEET NAVD88)
- ERH/SVE TREATMENT AREA - GROUNDWATER WITH PCE CONCENTRATIONS ABOVE 5,000 µg/L (0-40 FEET NAVD88)
- DHP — OVERHEAD POWER LINE
- x — FENCE
- N16 ELECTRODE/VAPOR RECOVERY POINT
- ERH ELECTRICAL RESISTANCE HEATING
- SVE SOIL VAPOR EXTRACTION
- PCE TETRACHLOROETHYLENE
- ▽ TEMPERATURE MONITORING POINT
- ⊕ TEMPERATURE MONITORING POINT AND MONITORING WELL
- mg/kg MILLIGRAMS PER KILOGRAM
- µg/L MICROGRAMS PER LITER
- T TRANSFORMER
- GAC GRANULAR ACTIVATED CARBON
- PCU POWER CONTROL UNIT
- ⊕ P-08/ W-MW-04 ANGLED MONITORING WELL
- ⊕ R-MW1 SHALLOW WATER BEARING ZONE WELL
- ⊕ G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- ⊕ P-07/ W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- ⊕ B102/ MW102 DEEP WATER BEARING ZONE WELL
- ⊕ R-MW4 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

B112/ MW112 R-MW5



SCLB-4/ MW-2 MW-9

8TH AVENUE NORTH

TREATMENT AREA

P-06/ W-MW-02 B104/ MW104

B107/ MW107

P-03/ W-MW-01 R-MW6

ROY STREET

DRAFT

B105/ MW105 BB-8 BB-8A

VAPOR RECOVERY PIPING OBTAINED FROM DRAWING Y-3, FOR THE DEXTER AVENUE PROJECT, 4/18/13, PREPARED BY TRS



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 CAD FILE: 0797-001_2015DCAP_SVE

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

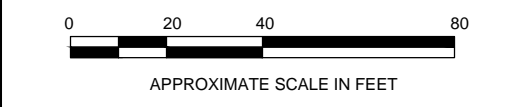
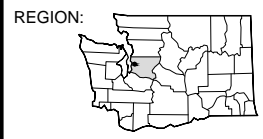
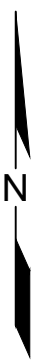
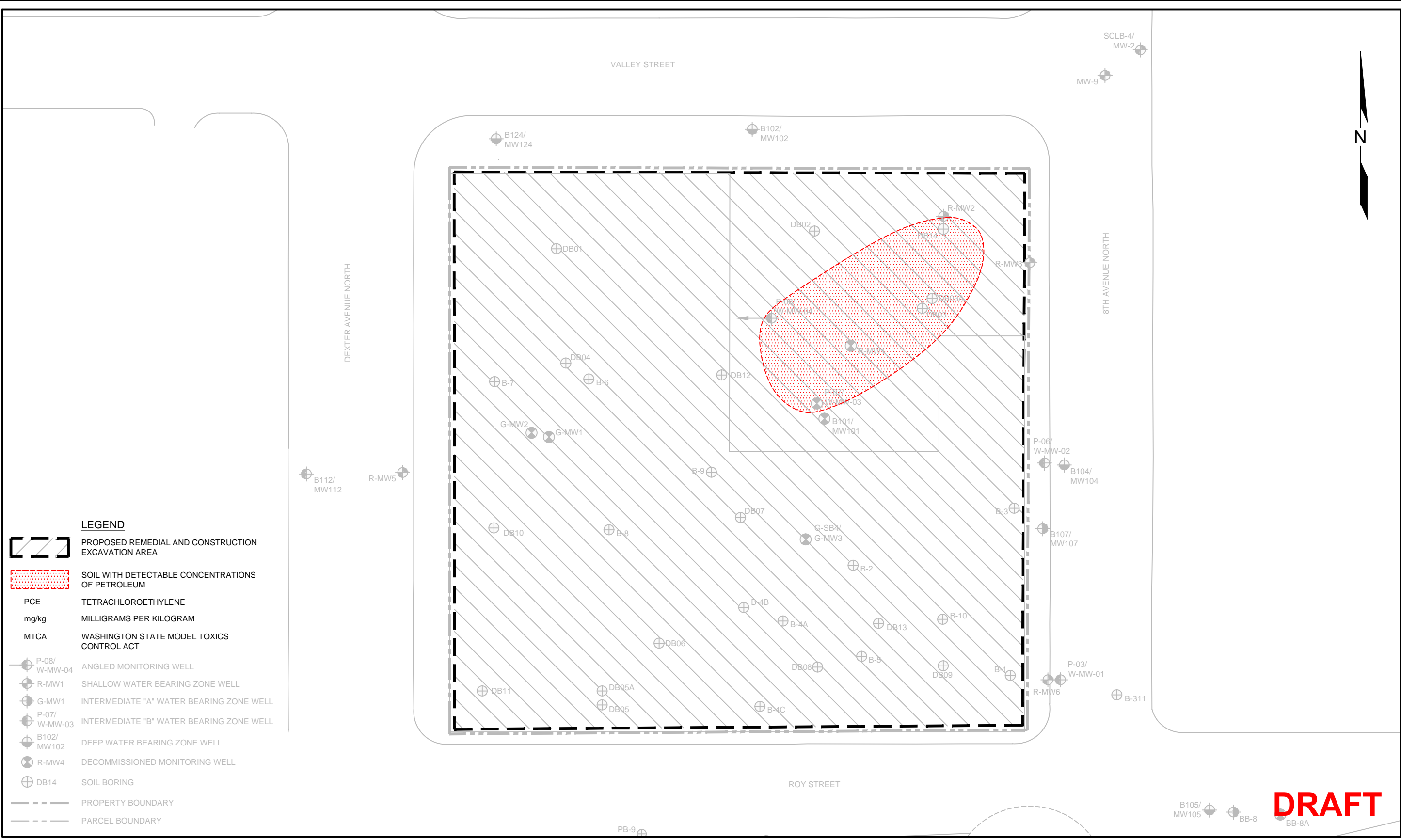


FIGURE 37
CONCEPTUAL SVE SYSTEM
PIPING LAYOUT



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 CAD FILE: 0797-001_2015DCAP_EXCA

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

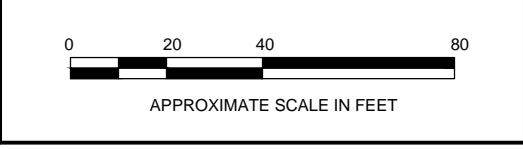
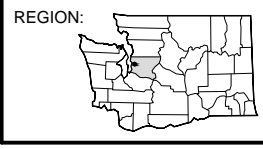
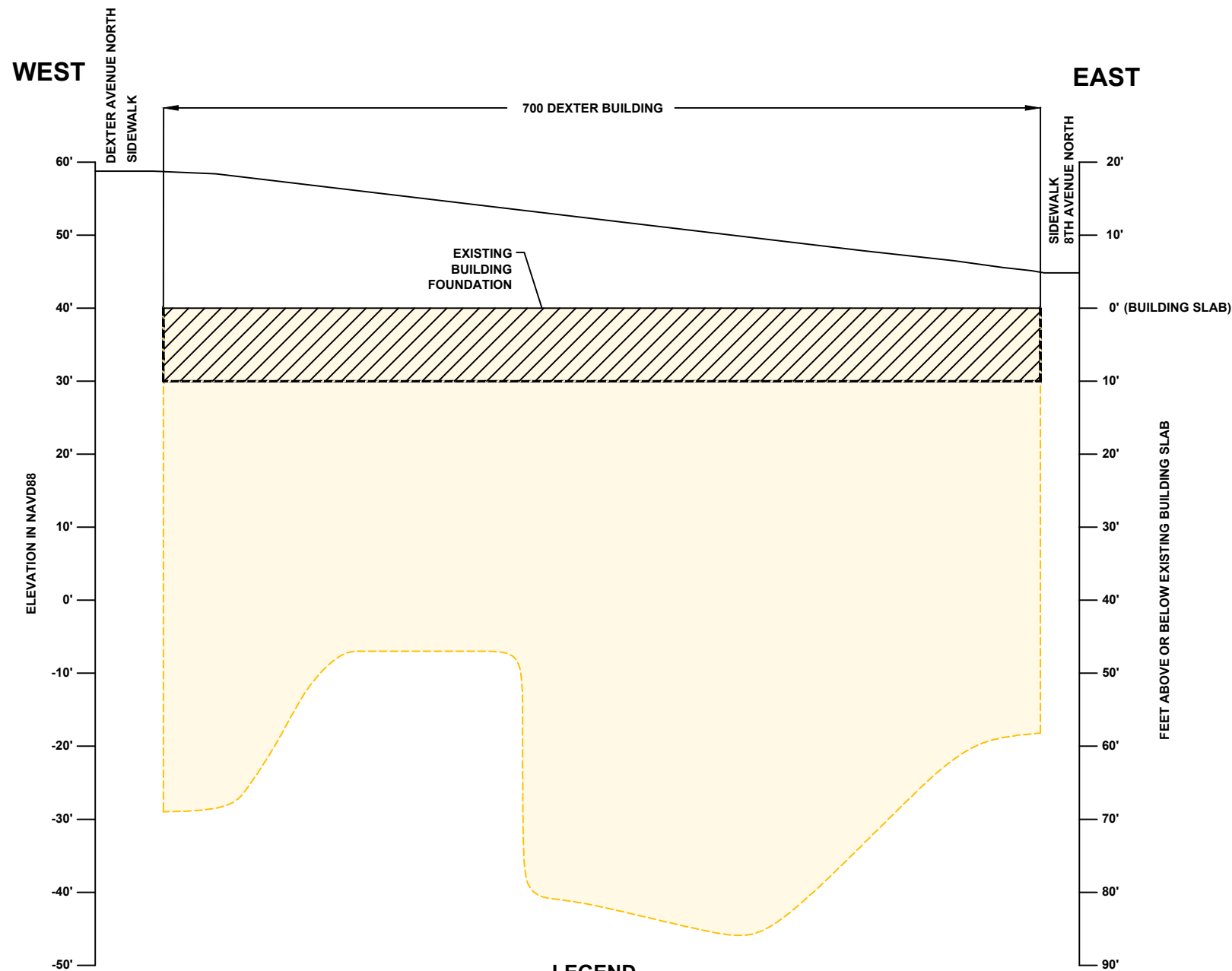


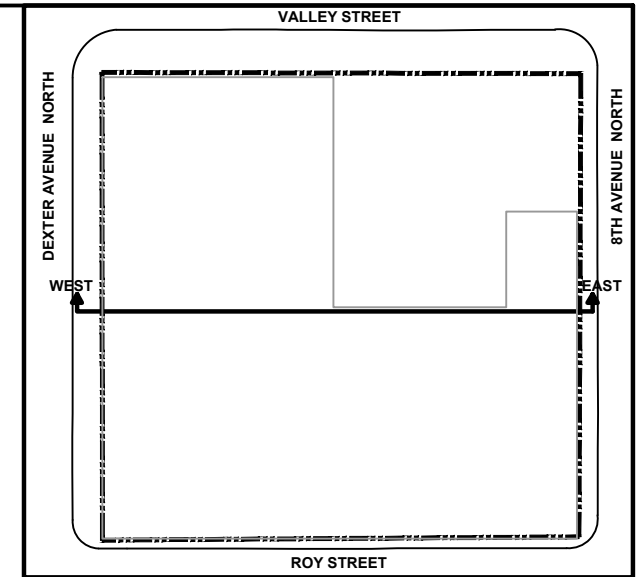


FIGURE 38
 REMEDIAL EXCAVATION AREA



LEGEND

-  PROPOSED REMEDIAL AND CONSTRUCTION EXCAVATION AREA
-  SOIL WITH CONCENTRATIONS OF PCE ABOVE THE MTCA METHOD A CLEANUP LEVEL
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- PCE TETRACHLOROETHYLENE



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 DRAWN BY: NAC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_EX_XAA

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

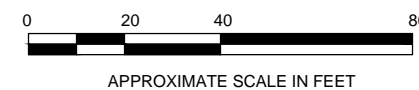
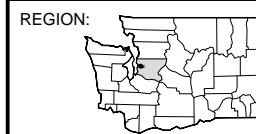
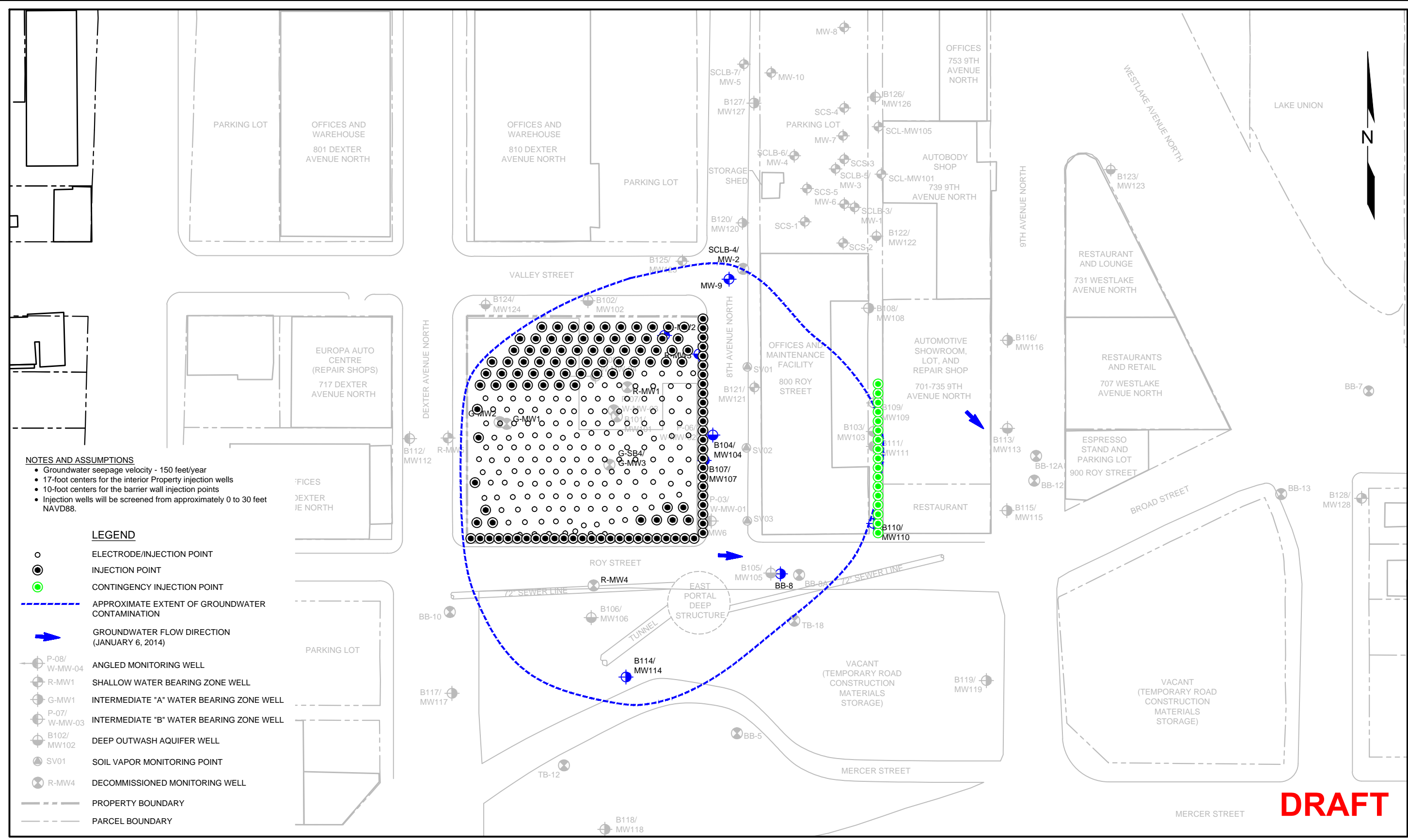


FIGURE 39
 CROSS SECTION WEST-EAST
 EXCAVATION AREA

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NOTES AND ASSUMPTIONS

- Groundwater seepage velocity - 150 feet/year
- 17-foot centers for the interior Property injection wells
- 10-foot centers for the barrier wall injection points
- Injection wells will be screened from approximately 0 to 30 feet NAVD88.

LEGEND

- ELECTRODE/INJECTION POINT
- INJECTION POINT
- CONTINGENCY INJECTION POINT
- APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION
- ➔ GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)
- ⊙ P-08/W-MW-04 ANGLED MONITORING WELL
- ⊙ R-MW1 SHALLOW WATER BEARING ZONE WELL
- ⊙ G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- ⊙ P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- ⊙ B102/MW102 DEEP OUTWASH AQUIFER WELL
- ⊙ SV01 SOIL VAPOR MONITORING POINT
- ⊙ R-MW4 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

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DATE: 01/15/14
 DRAWN BY: BLR/JQC/NAC
 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_CA1_A

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

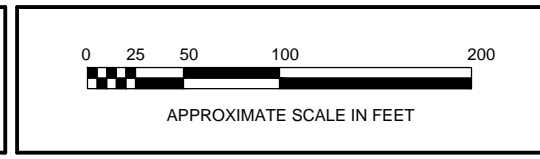
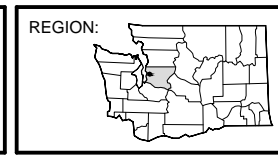


FIGURE 40
 CLEANUP ACTION PLAN
 SHALLOW TREATMENT ZONE
 IN SITU REDUCTIVE DECHLORINATION

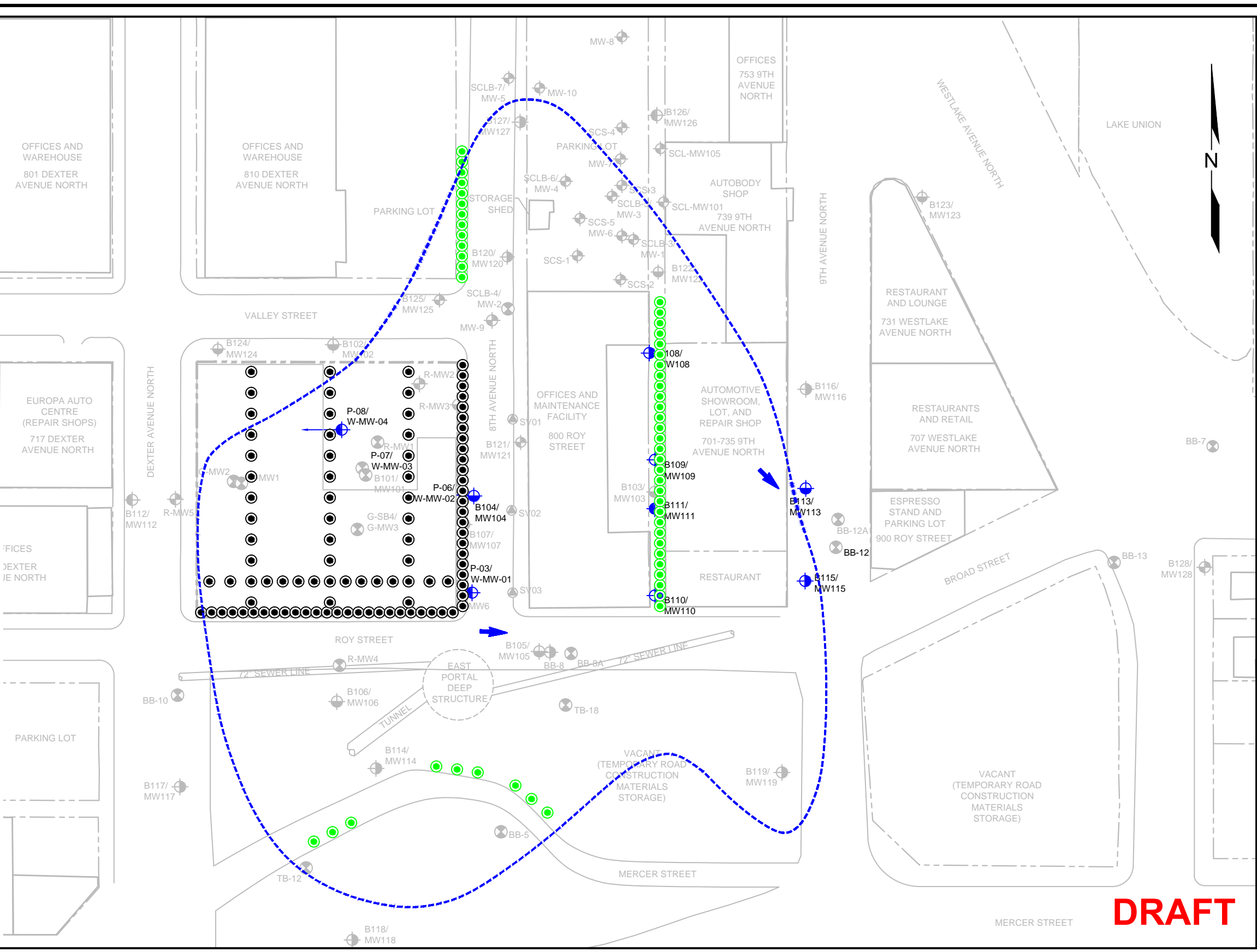
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- NOTES AND ASSUMPTIONS**
- Groundwater seepage velocity - 25 feet/year
 - 20-foot centers for the North-South injection well transects
 - 75-foot spacing being transect lines
 - 10-foot centers for the barrier wall injection points
 - Injection wells will be screened from approximately 0 to -40 feet NAVD88.

LEGEND

- INJECTION POINT
- CONTINGENCY INJECTION POINT
- APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION
- ➔ GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)
- ⊙ P-08/W-MW-04 ANGLED MONITORING WELL
- ⊙ R-MW1 SHALLOW WATER BEARING ZONE WELL
- ⊙ G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- ⊙ P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- ⊙ B102/MW102 DEEP OUTWASH AQUIFER WELL
- ⊙ SV01 SOIL VAPOR MONITORING POINT
- ⊙ R-MW4 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY



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 CAD FILE: 0797-001_2015DCAP_CA1_B

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

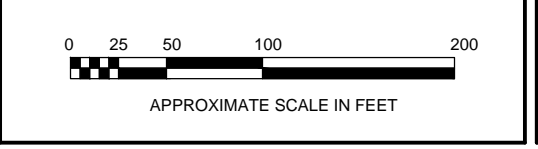
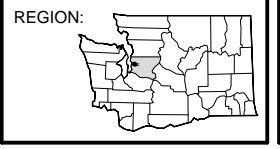
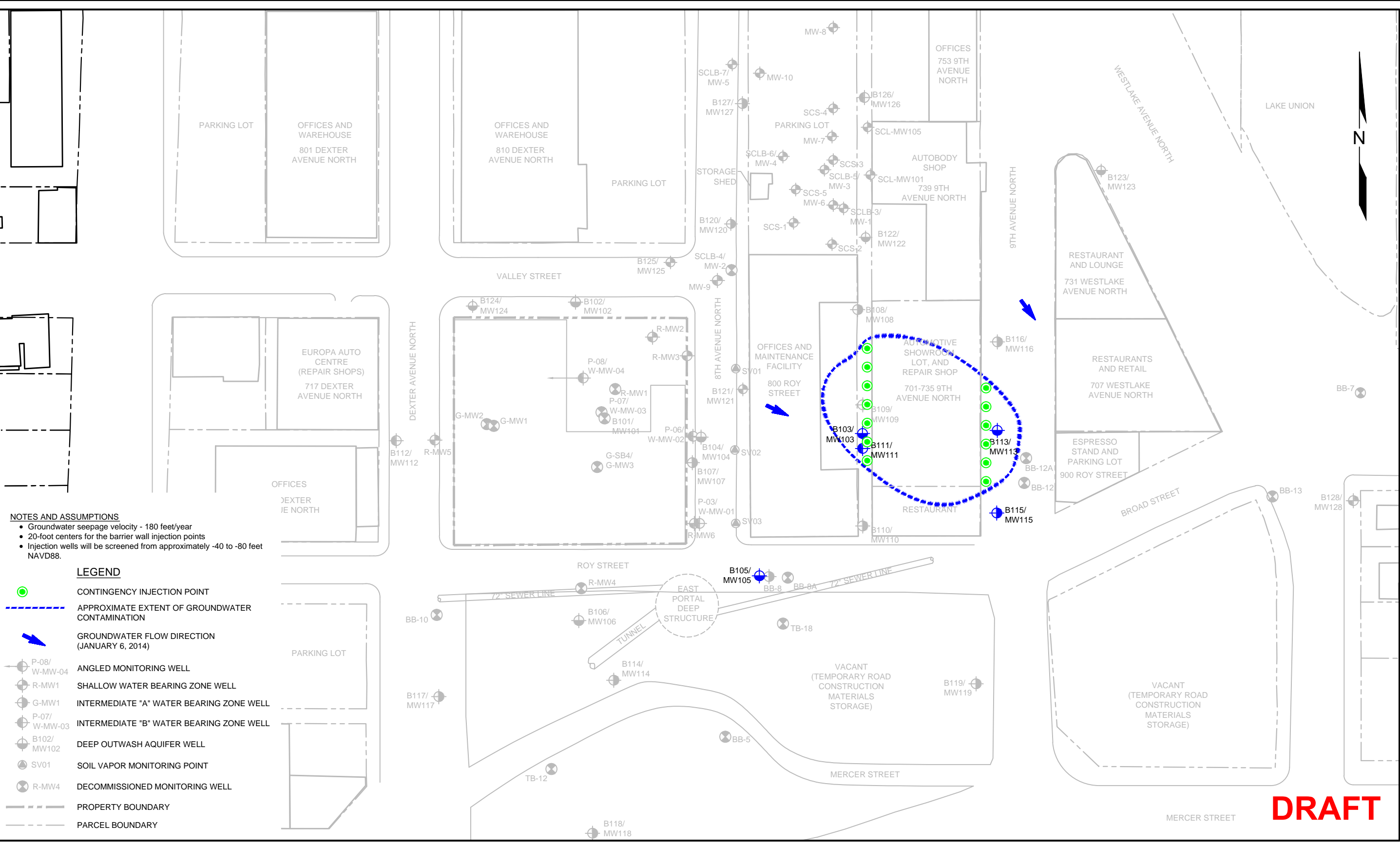


FIGURE 41
 CLEANUP ACTION PLAN
 INTERMEDIATE TREATMENT ZONE
 IN SITU REDUCTIVE DECHLORINATION

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NOTES AND ASSUMPTIONS

- Groundwater seepage velocity - 180 feet/year
- 20-foot centers for the barrier wall injection points
- Injection wells will be screened from approximately -40 to -80 feet NAVD88.

- LEGEND**
- CONTINGENCY INJECTION POINT
 - - - APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION
 - ➔ GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)
 - P-08/
W-MW-04 ANGLED MONITORING WELL
 - R-MW1 SHALLOW WATER BEARING ZONE WELL
 - G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
 - P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
 - B102/
MW102 DEEP OUTWASH AQUIFER WELL
 - SV01 SOIL VAPOR MONITORING POINT
 - ⊗ R-MW4 DECOMMISSIONED MONITORING WELL
 - PROPERTY BOUNDARY
 - PARCEL BOUNDARY

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DATE: 01/15/14
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 CHECKED BY: CCC
 CAD FILE: 0797-001_2015DCAP_CA1_C

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

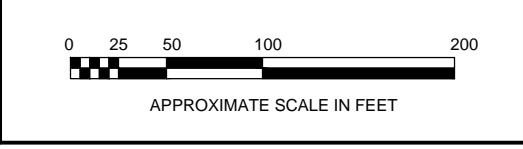
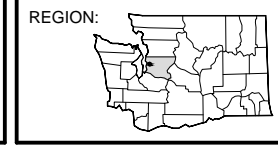
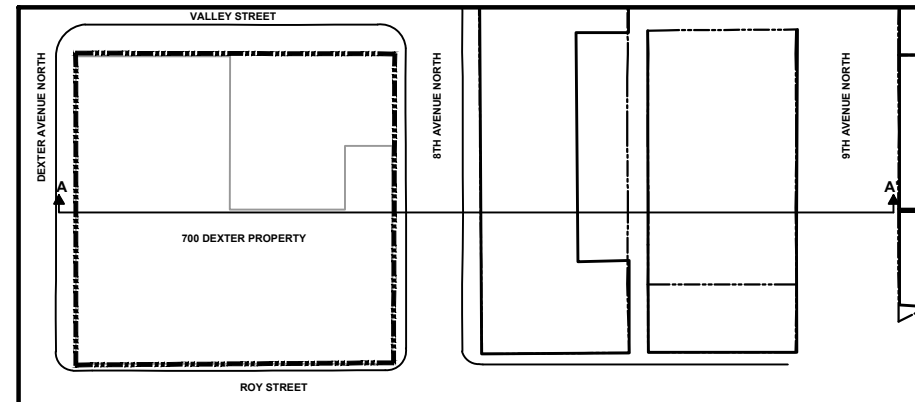
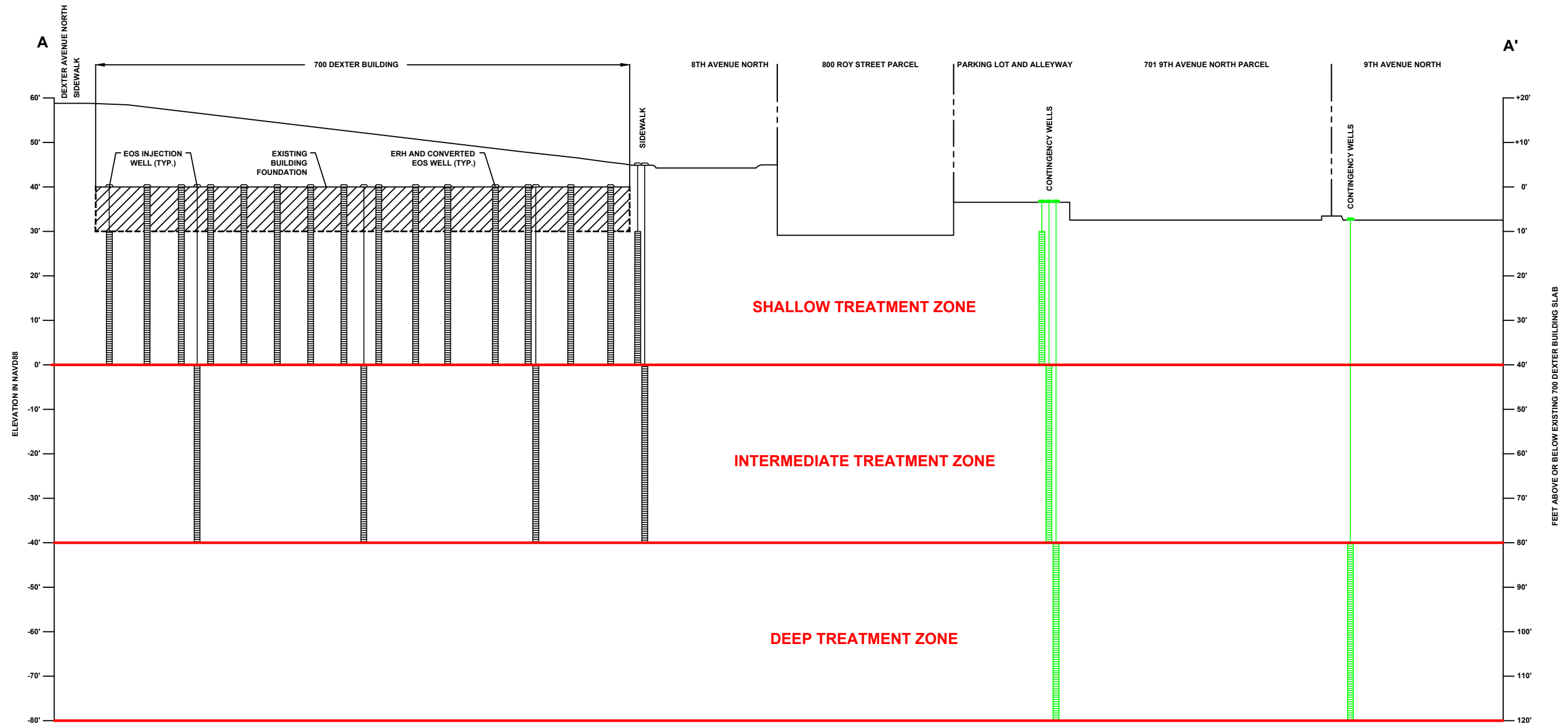



FIGURE 42
 CLEANUP ACTION PLAN
 DEEP TREATMENT ZONE
 IN SITU REDUCTIVE DECHLORINATION

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- LEGEND**
-  PROPOSED EXCAVATION AREA
 - ERH ELECTRICAL RESISTANCE HEATING
 - EOS EDIBLE OIL SUBSTRATE

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DATE: 05/03/13
 DRAWN BY: NAC
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 CAD FILE: 0797-001_2015DCAP_CA1_XAA

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

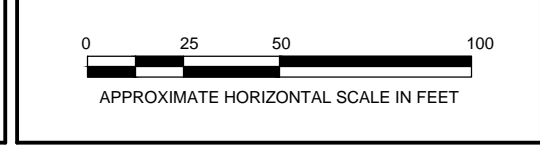
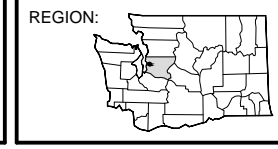


FIGURE 43
 CLEANUP ACTION PLAN
 CROSS SECTION A-A'
 IN SITU REDUCTIVE DECHLORINATION

9/15/2015
P:\0797 FRONTIER ENV MGMT\0797-001_700 DEXTER\TECHNICAL\CAD\2015 DCAP\0797-001_2015DCAP_PCE_SD1.DWG

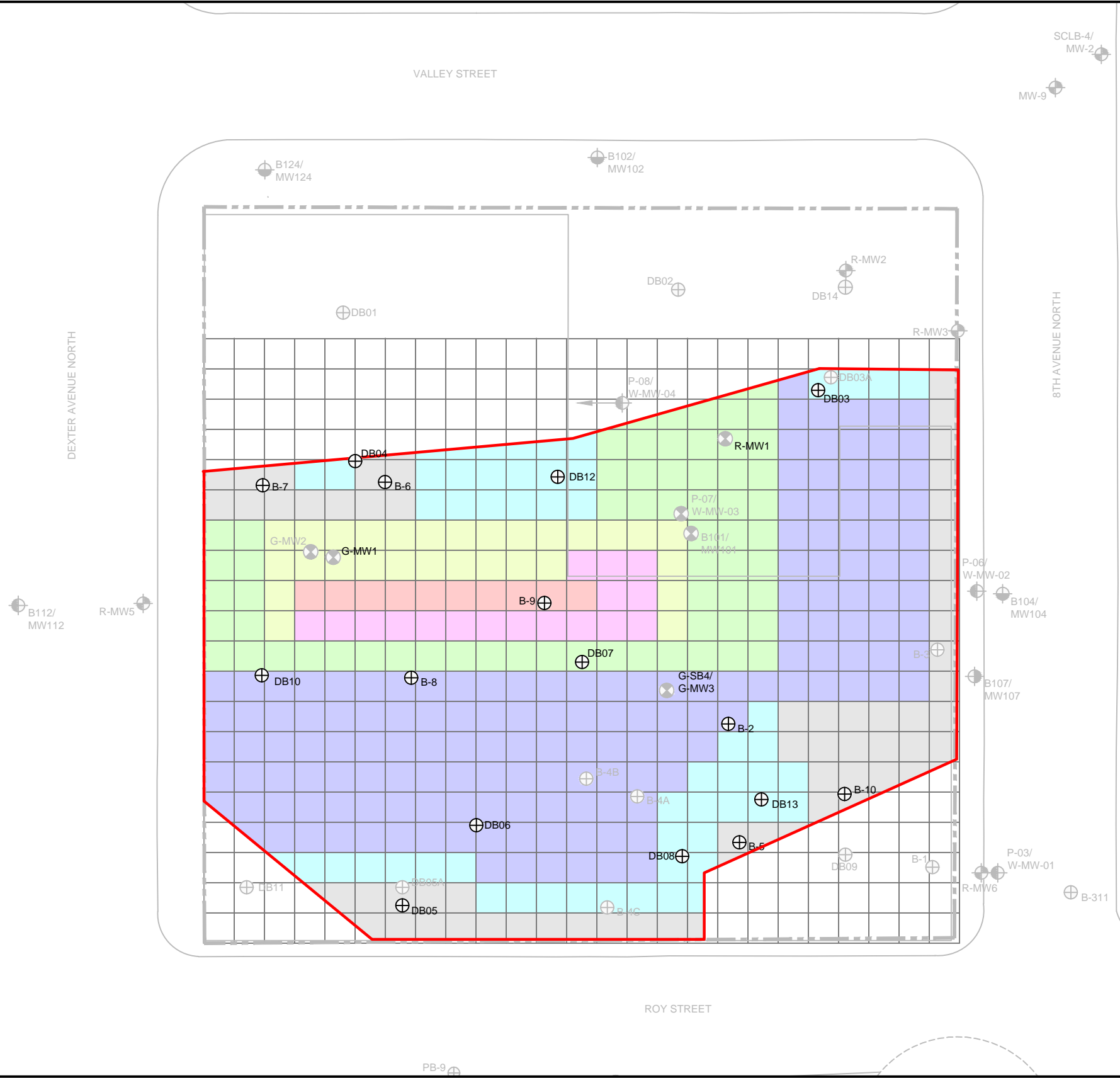
LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/
MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- DB14 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

PCE TETRACHLOROETHYLENE
mg/kg MILLIGRAMS PER KILOGRAM
MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS

CONCENTRATION OF TOTAL CVOCs NORMALIZED AS PCE IN mg/kg

	>100
	90-100
	30-40
	20-30
	10-20
	1-10
	0.5-1
	0.05-0.5
	<0.05



B105/
MW105 BB-8 BB-8A **DRAFT**



DATE: 01/14/14
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 CAD FILE: 0797-001_2014CAP_PCE_SD1

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

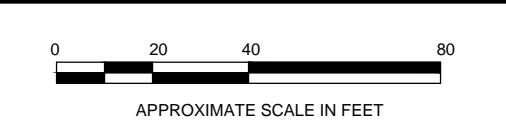
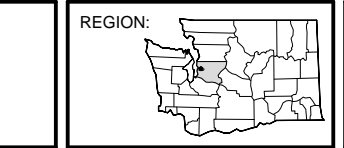


FIGURE 44
 SOIL RANGES OF NORMALIZED PCE
 CONCENTRATIONS FROM 0-10'

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LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- DB14 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

PCE TETRACHLOROETHYLENE
 mg/kg MILLIGRAMS PER KILOGRAM
 MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS

CONCENTRATION OF TOTAL CVOCs NORMALIZED AS PCE IN mg/kg

	>100
	90-100
	30-40
	20-30
	10-20
	1-10
	0.5-1
	0.05-0.5
	<0.05



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DATE: 01/14/14
 DRAWN BY: NAC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_PCE_SD2

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

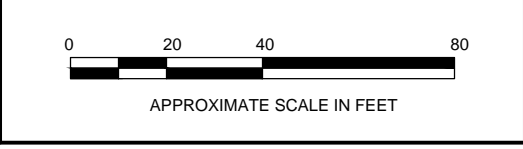
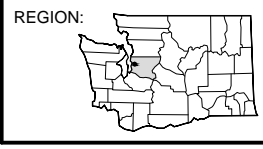


FIGURE 45
 SOIL RANGES OF NORMALIZED PCE CONCENTRATIONS FROM 10-20'

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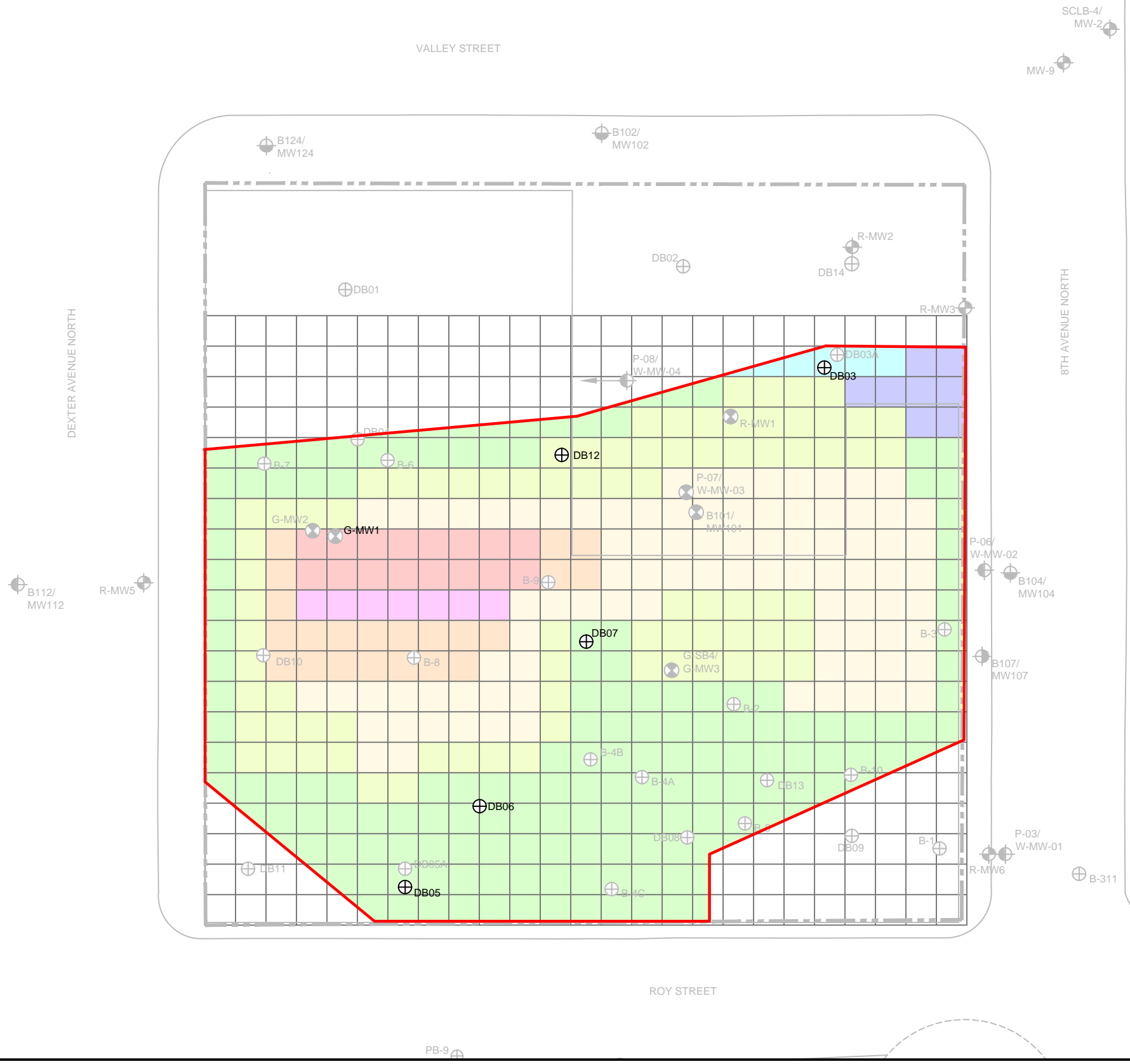
LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- DB14 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

PCE TETRACHLOROETHYLENE
 mg/kg MILLIGRAMS PER KILOGRAM
 MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS

CONCENTRATION OF TOTAL CVOCs NORMALIZED AS PCE IN mg/kg

	>100
	90-100
	30-40
	20-30
	10-20
	1-10
	0.5-1
	0.05-0.5
	<0.05



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DATE: 01/14/14
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 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_PCE_SD3

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

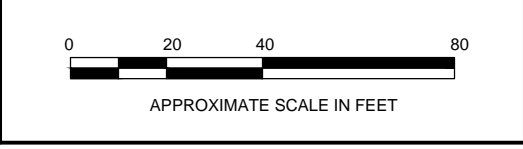
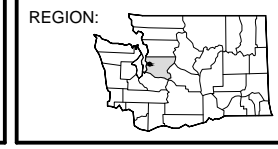


FIGURE 46
 SOIL RANGES OF NORMALIZED PCE CONCENTRATIONS FROM 20-30'

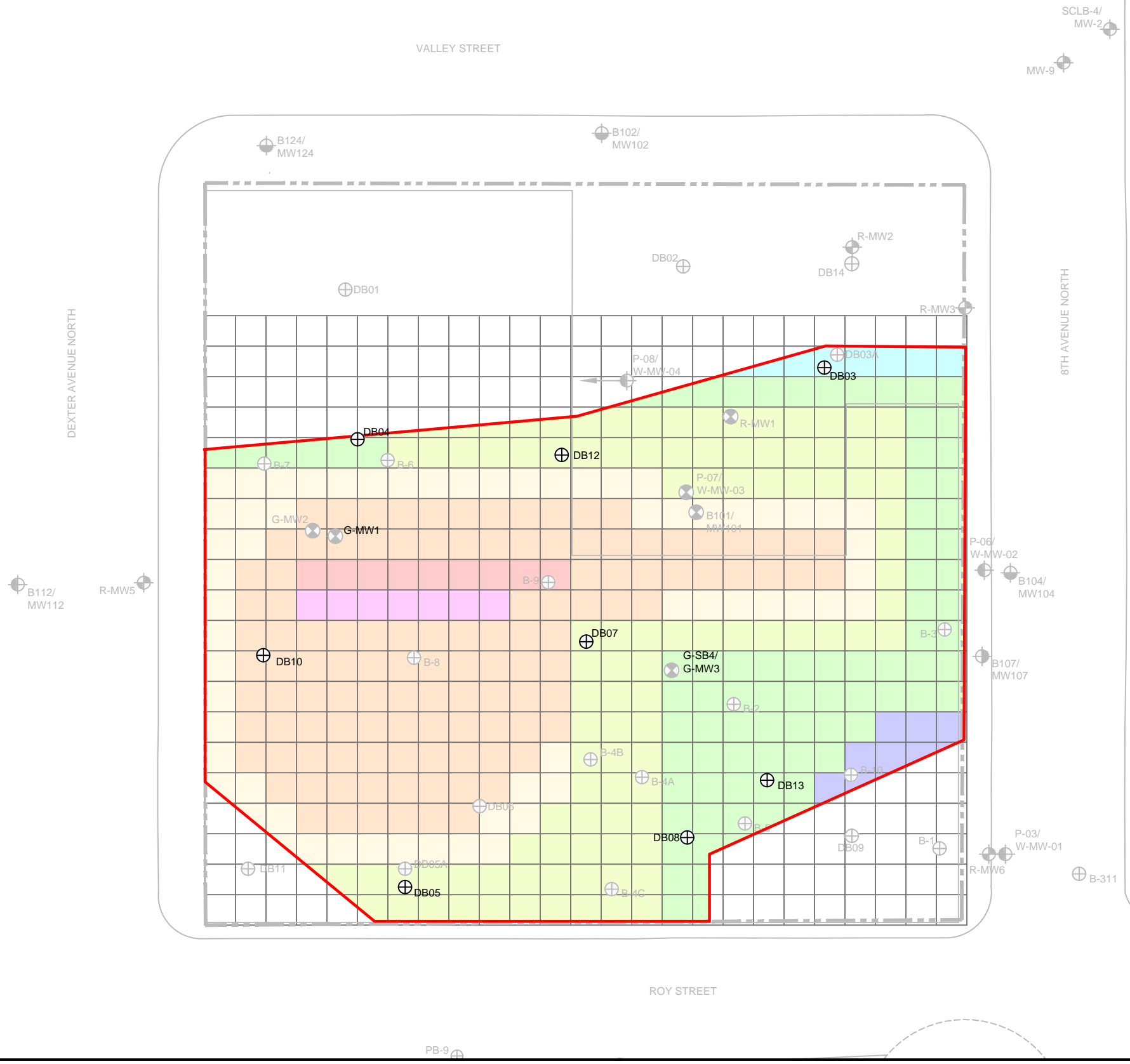
LEGEND

- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- DB14 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

PCE TETRACHLOROETHYLENE
 mg/kg MILLIGRAMS PER KILOGRAM
 MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
 CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS

CONCENTRATION OF TOTAL CVOCs NORMALIZED AS PCE IN mg/kg

- >100
- 90-100
- 30-40
- 20-30
- 10-20
- 1-10
- 0.5-1
- 0.05-0.5
- <0.05



DRAFT



DATE: 01/14/14
 DRAWN BY: NAC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015DCAP_PCE_SD4

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

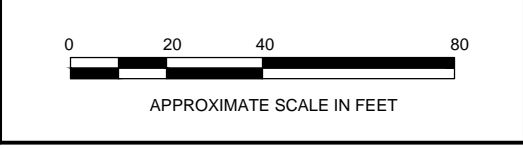
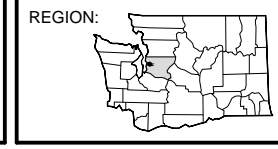
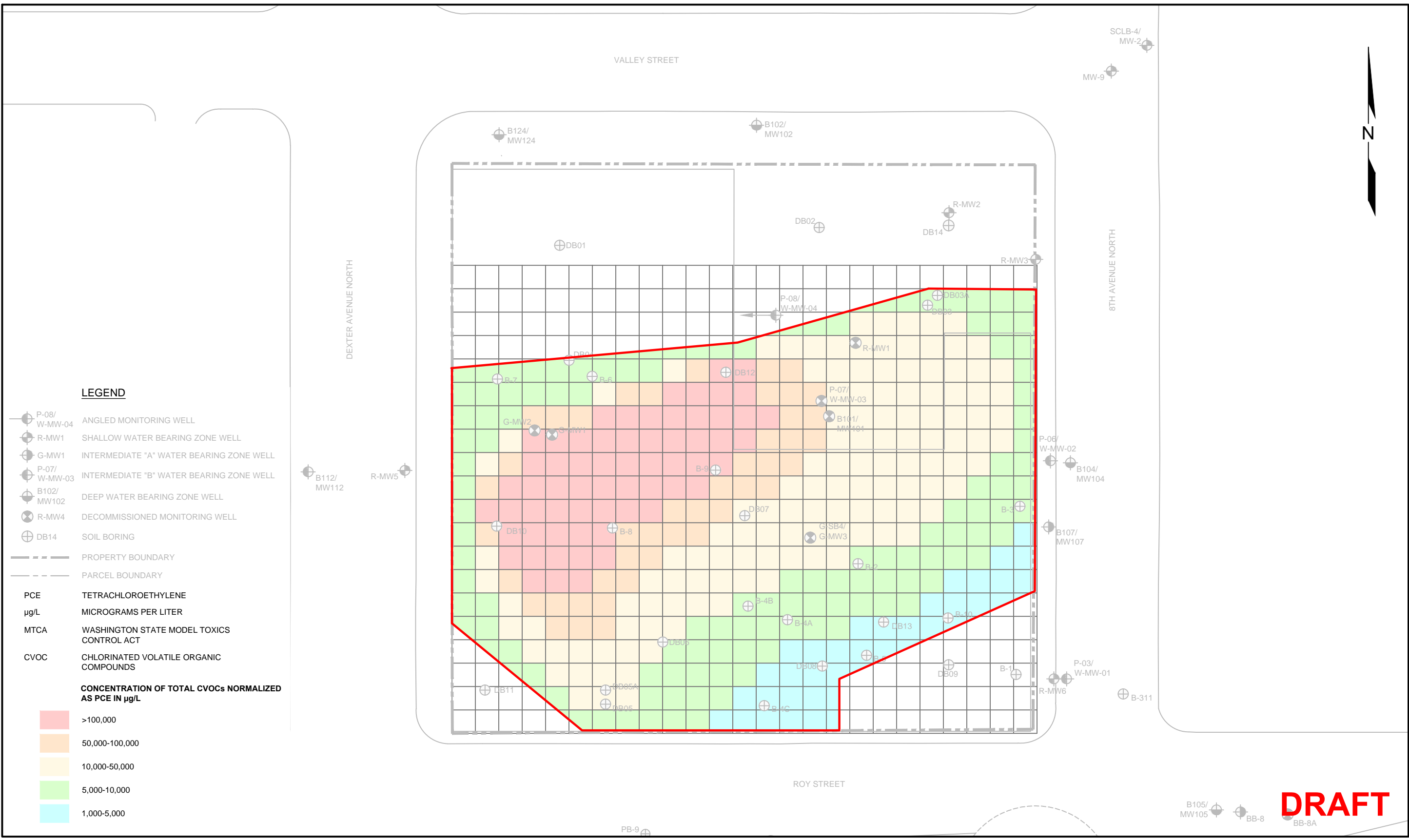


FIGURE 47
 SOIL RANGES OF NORMALIZED PCE CONCENTRATIONS FROM 30-40'



LEGEND

- P-08/
W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/
W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/
MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- DB14 SOIL BORING
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- PCE TETRACHLOROETHYLENE
- µg/L MICROGRAMS PER LITER
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS

CONCENTRATION OF TOTAL CVOCs NORMALIZED AS PCE IN µg/L

- >100,000
- 50,000-100,000
- 10,000-50,000
- 5,000-10,000
- 1,000-5,000

DRAFT



DATE: _____ 01/14/14
 DRAWN BY: _____ NAC
 CHECKED BY: _____ SES
 CAD FILE: _____ 0797-001_2015DCAP_PCE_GD1

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

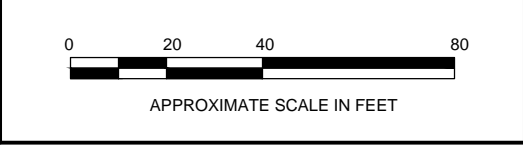
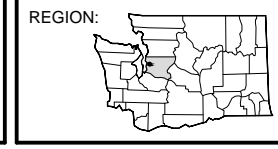


FIGURE 48
 GROUNDWATER RANGES OF NORMALIZED PCE CONCENTRATIONS FROM 10-40'

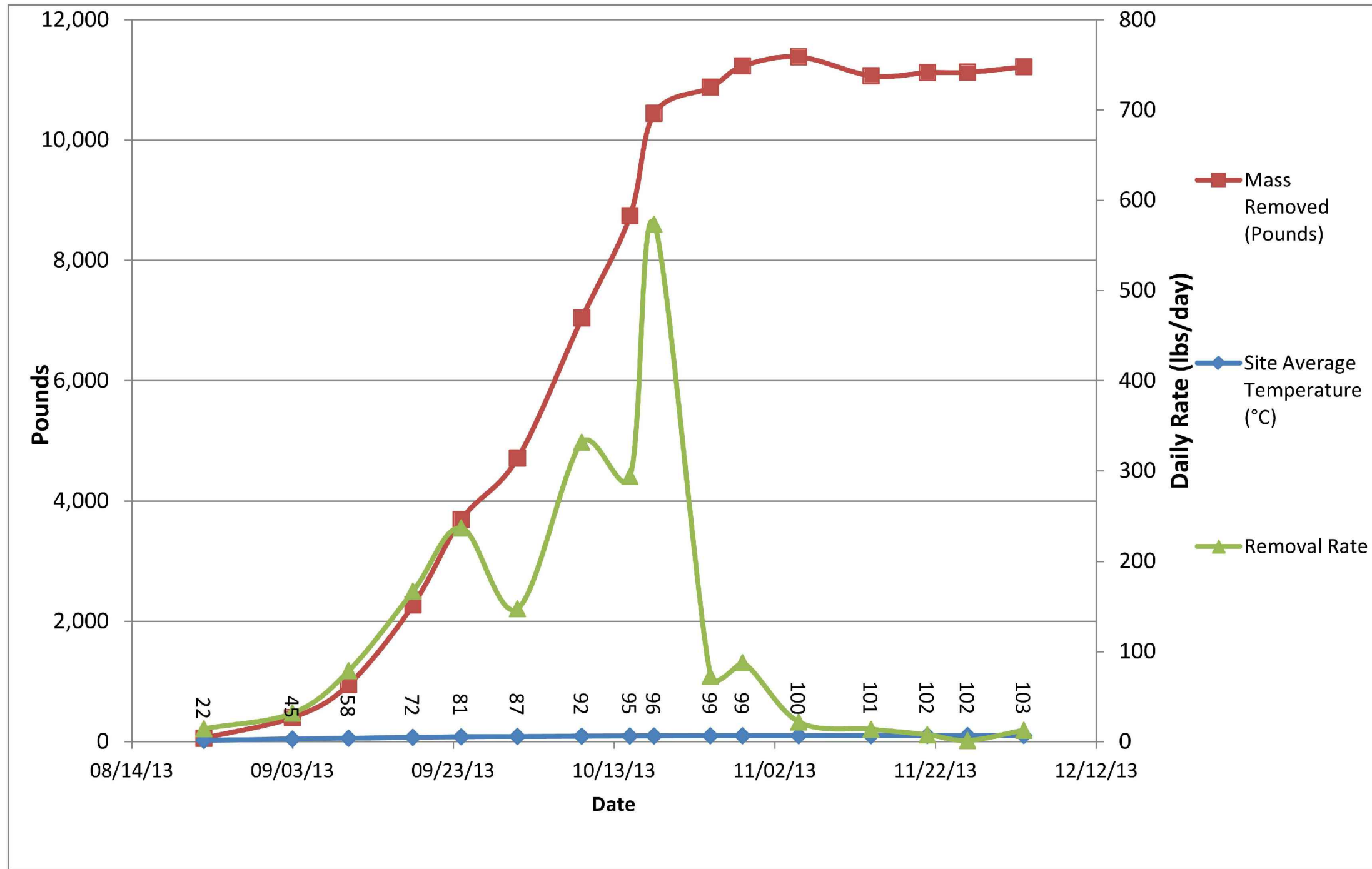


Figure 2 Cumulative Mass Removed vs. Average Treatment Area Temperatures

DRAFT



DATE: _____ 01/14/14
 DRAWN BY: _____ NAC
 CHECKED BY: _____ SES
 CAD FILE: _____ 0797-001_2015DCAP_FIG49

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

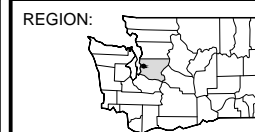
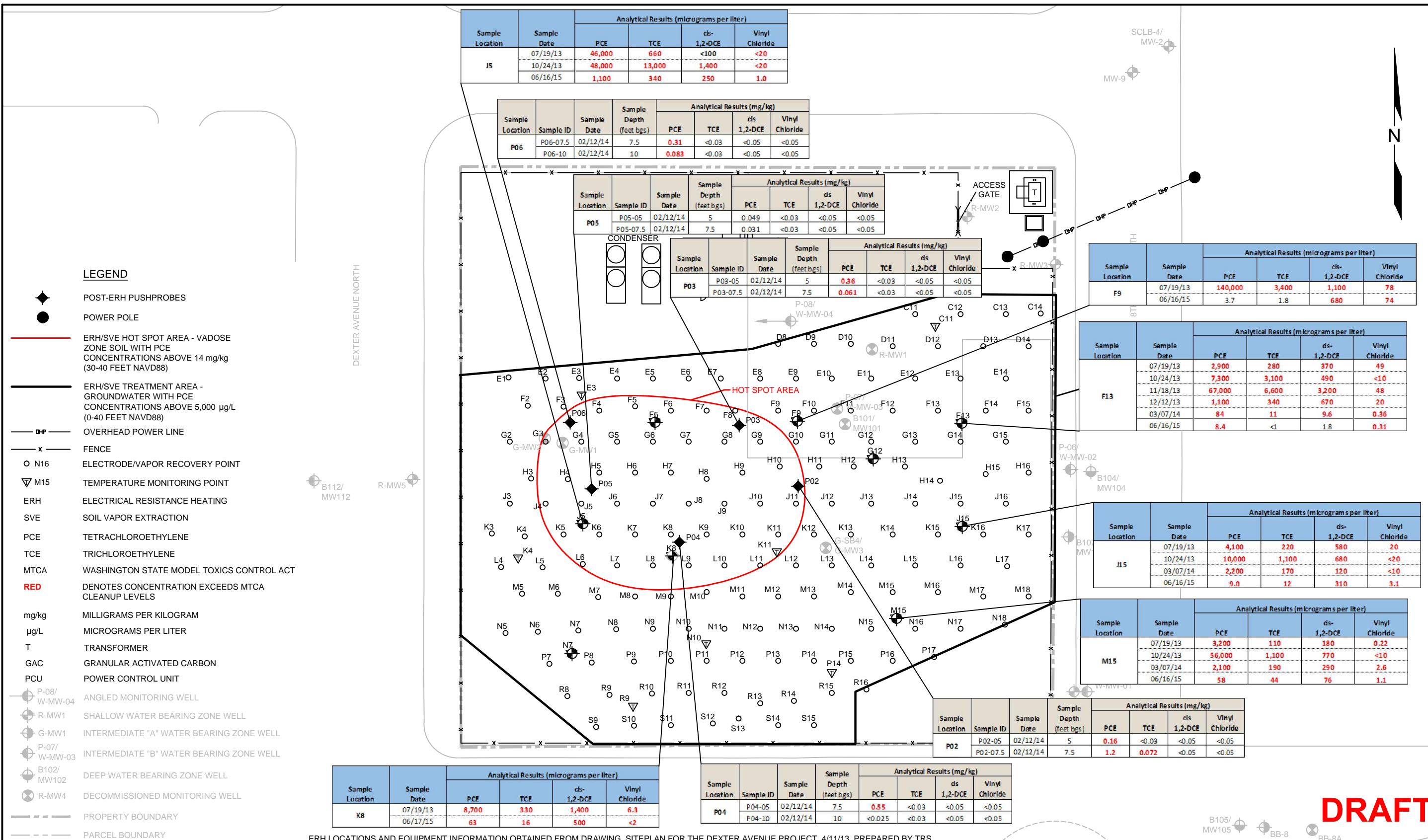


FIGURE 49
 CUMULATIVE MASS REMOVED BY
 ON-PROPERTY ERH/SVE SYSTEM

P:0797 FRONTIER ENV MGMT\0797-001-01 700 DEXTER\TECHNICAL\CAD\2015 DCA\0797-001_2015DCAP_FIG4.DWG 9/4/2015



LEGEND

- ◆ POST-ERH PUSHPROBES
- POWER POLE
- ERH/SVE HOT SPOT AREA - VADOSE ZONE SOIL WITH PCE CONCENTRATIONS ABOVE 14 mg/kg (30-40 FEET NAVD88)
- ERH/SVE TREATMENT AREA - GROUNDWATER WITH PCE CONCENTRATIONS ABOVE 5,000 µg/L (0-40 FEET NAVD88)
- DHP OVERHEAD POWER LINE
- x FENCE
- N16 ELECTRODE/VAPOR RECOVERY POINT
- ▽ M15 TEMPERATURE MONITORING POINT
- ERH ELECTRICAL RESISTANCE HEATING
- SVE SOIL VAPOR EXTRACTION
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
- RED DENOTES CONCENTRATION EXCEEDS MTCA CLEANUP LEVELS
- mg/kg MILLIGRAMS PER KILOGRAM
- µg/L MICROGRAMS PER LITER
- T TRANSFORMER
- GAC GRANULAR ACTIVATED CARBON
- PCU POWER CONTROL UNIT
- P-08/W-MW-04 ANGLED MONITORING WELL
- R-MW1 SHALLOW WATER BEARING ZONE WELL
- G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
- P-07/W-MW-03 INTERMEDIATE "B" WATER BEARING ZONE WELL
- B102/MW102 DEEP WATER BEARING ZONE WELL
- R-MW4 DECOMMISSIONED MONITORING WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

Sample Location	Sample Date	Analytical Results (micrograms per liter)			
		PCE	TCE	cs-1,2-DCE	Vinyl Chloride
K8	07/19/13	8,700	330	1,400	6.3
	06/17/15	63	16	500	<2

Sample Location	Sample ID	Sample Date	Sample Depth (feet bgs)	Analytical Results (mg/kg)			
				PCE	TCE	ds 1,2-DCE	Vinyl Chloride
P04	P04-05	02/12/14	7.5	0.55	<0.03	<0.05	<0.05
	P04-10	02/12/14	10	<0.025	<0.03	<0.05	<0.05

Sample Location	Sample ID	Sample Date	Sample Depth (feet bgs)	Analytical Results (mg/kg)			
				PCE	TCE	ds 1,2-DCE	Vinyl Chloride
P02	P02-05	02/12/14	5	0.16	<0.03	<0.05	<0.05
	P02-07.5	02/12/14	7.5	1.2	0.072	<0.05	<0.05

Sample Location	Sample Date	Analytical Results (micrograms per liter)			
		PCE	TCE	cs-1,2-DCE	Vinyl Chloride
J5	07/19/13	46,000	660	<100	<20
	10/24/13	48,000	13,000	1,400	<20
	06/16/15	1,100	340	250	1.0

Sample Location	Sample ID	Sample Date	Sample Depth (feet bgs)	Analytical Results (mg/kg)			
				PCE	TCE	cs 1,2-DCE	Vinyl Chloride
P06	P06-07.5	02/12/14	7.5	0.31	<0.03	<0.05	<0.05
	P06-10	02/12/14	10	0.083	<0.03	<0.05	<0.05

Sample Location	Sample ID	Sample Date	Sample Depth (feet bgs)	Analytical Results (mg/kg)			
				PCE	TCE	ds 1,2-DCE	Vinyl Chloride
P05	P05-05	02/12/14	5	0.049	<0.03	<0.05	<0.05
	P05-07.5	02/12/14	7.5	0.031	<0.03	<0.05	<0.05

Sample Location	Sample ID	Sample Date	Sample Depth (feet bgs)	Analytical Results (mg/kg)			
				PCE	TCE	ds 1,2-DCE	Vinyl Chloride
P03	P03-05	02/12/14	5	0.36	<0.03	<0.05	<0.05
	P03-07.5	02/12/14	7.5	0.061	<0.03	<0.05	<0.05

Sample Location	Sample Date	Analytical Results (micrograms per liter)			
		PCE	TCE	cs-1,2-DCE	Vinyl Chloride
F9	07/19/13	140,000	3,400	1,100	78
	06/16/15	3.7	1.8	680	74

Sample Location	Sample Date	Analytical Results (micrograms per liter)			
		PCE	TCE	ds-1,2-DCE	Vinyl Chloride
F13	07/19/13	2,900	280	370	49
	10/24/13	7,300	3,100	490	<10
	11/18/13	67,000	6,600	3,200	48
	12/12/13	1,100	340	670	20
	03/07/14	84	11	9.6	0.36
06/16/15	8.4	<1	1.8	0.31	

Sample Location	Sample Date	Analytical Results (micrograms per liter)			
		PCE	TCE	ds-1,2-DCE	Vinyl Chloride
J15	07/19/13	4,100	220	580	20
	10/24/13	10,000	1,100	680	<20
	03/07/14	2,200	170	120	<10
	06/16/15	9.0	12	310	3.1

Sample Location	Sample Date	Analytical Results (micrograms per liter)			
		PCE	TCE	ds-1,2-DCE	Vinyl Chloride
M15	07/19/13	3,200	110	180	0.22
	10/24/13	56,000	1,100	770	<10
	03/07/14	2,100	190	290	2.6
	06/16/15	58	44	76	1.1

ERH LOCATIONS AND EQUIPMENT INFORMATION OBTAINED FROM DRAWING, SITEPLAN FOR THE DEXTER AVENUE PROJECT, 4/11/13, PREPARED BY TRS

DRAFT



DATE: 08/18/15
 DRAWN BY: NAC
 CHECKED BY: SES
 CAD FILE: 0797-001_2015_ERH

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

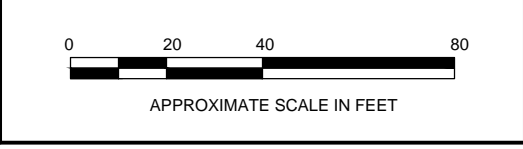
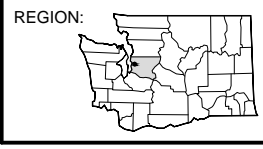


FIGURE 50
 SOIL AND GROUNDWATER ANALYTICAL RESULTS FOR ON-PROPERTY SHALLOW WELLS

TABLES



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
R-MW1	Property	4 to 14	28.11	10/24/92	Roux	7.15	20.96
				01/29/09	DOF	10.50	17.61
			37.78	02/19/10	SoundEarth	10.35	27.43
				06/02/11	SoundEarth	7.79	29.99
				02/07/12	Windward	8.98	28.80
				09/05/12	SoundEarth	10.11	27.67
				12/21/12	SoundEarth	8.44	29.34
				03/29/13	SoundEarth	6.72	31.06
Decommissioned							
R-MW2	Property	5 to 15	30.86	10/24/92	Roux	10.04	20.82
				01/29/09	DOF	12.97	17.89
			40.53	02/19/10	SoundEarth	12.93	27.60
				06/02/11	SoundEarth	10.52	30.01
			41.74	02/07/12	Windward	11.61	30.13
				09/04/12	SoundEarth	12.64	29.10
				12/21/12	SoundEarth	10.84	30.90
				03/29/13	SoundEarth	9.85	31.89
01/06/14	SoundEarth	Dry	--				
R-MW3	Property	7 to 17	32.04	10/24/92	Roux	11.29	20.75
				01/29/09	DOF	14.22	17.82
			41.74	02/19/10	SoundEarth	14.21	27.53
				06/02/11	SoundEarth	11.77	29.97
				02/07/12	Windward	12.90	28.84
				09/04/12	SoundEarth	14.00	27.74
				12/21/12	SoundEarth	12.09	29.65
				03/29/13	SoundEarth	11.17	30.57
01/06/14	SoundEarth	16.35	25.39				
R-MW4	Property	15 to 30	40.94	10/24/92	Roux	21.99	18.95
Decommissioned before 2009							
R-MW5	Dexter Avenue N ROW	15 to 30	47.20	10/28/92	Roux	22.89	24.31
				01/29/09	DOF	22.80	24.40
			57.01	02/19/10	SoundEarth	21.93	35.08
				06/02/11	SoundEarth	20.48	36.53
			57.03	02/07/12	Windward	21.61	35.40
				09/05/12	SoundEarth	23.72	33.31
				12/21/12	SoundEarth	22.55	34.48
				03/29/13	SoundEarth	21.72	35.31
12/18/13	SoundEarth	28.59	28.44				
R-MW6	Property	12 to 22	35.39	10/28/92	Roux	17.85	17.54
				01/29/09	DOF	19.15	16.24
			45.18	02/19/10	SoundEarth	18.25	26.93
				05/03/10	SoundEarth	18.25	26.93
				06/02/11	SoundEarth	16.22	28.96
			45.28	02/07/12	Windward	14.11	31.07
				09/05/12	SoundEarth	19.38	25.90
				12/21/12	SoundEarth	15.27	30.01
03/29/13	SoundEarth	17.18	28.10				
01/06/14	SoundEarth	22.58	22.70				



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
G-MW1	Property	30 to 35	--	07/24/01	GeoEngineers	10.54	--
				01/29/09	DOF	11.25	--
			39.01	02/19/10	SoundEarth	10.47	28.54
				06/03/11	SoundEarth	8.15	30.86
				02/07/12	Windward	9.34	29.67
				09/06/12	SoundEarth	11.11	27.90
				12/21/12	SoundEarth	9.04	29.97
				03/29/13	SoundEarth	10.11	28.90
Decommissioned							
G-MW2	Property	8 to 18	--	07/24/01	GeoEngineers	9.93	--
				01/29/09	DOF	10.76	--
			38.95	06/02/11	SoundEarth	7.45	31.50
				02/07/12	Windward	8.49	30.46
			39.00	09/06/12	SoundEarth	10.53	28.47
				12/21/12		9.63	29.37
				03/29/13	SoundEarth	8.56	30.44
			Decommissioned				
G-MW3	Property	26 to 36	--	07/24/01	GeoEngineers	13.05	--
				12/10/04	DOF	15.30	--
				01/29/09	DOF	13.49	--
			39.55	02/19/10	SoundEarth	12.83	26.72
				06/02/11	SoundEarth	11.00	28.55
				02/07/12	Windward	10.51	29.04
				09/06/12	SoundEarth	13.14	26.41
				12/21/12	SoundEarth	10.95	28.60
				03/29/13	SoundEarth	11.14	28.41
				Decommissioned			
W-MW-01	8th Avenue ROW	70 to 80	44.88	02/07/12	Windward	21.22	23.66
				09/06/12	SoundEarth	23.26	21.62
				12/21/12	SoundEarth	21.82	23.06
				03/29/13	SoundEarth	23.63	21.25
				01/06/14	SoundEarth	28.96	15.92
				06/16/15	SoundEarth	24.60	20.28
W-MW-02	8th Avenue ROW	70 to 80	43.46	02/07/12	Windward	17.51	25.95
				09/05/12	SoundEarth	19.95	23.51
				12/21/12	SoundEarth	17.82	25.64
				03/29/13	SoundEarth	19.14	24.32
				01/06/14	SoundEarth	24.40	19.06
				06/16/15	SoundEarth	18.79	24.67
W-MW-03	Property	70 to 80	39.23	02/07/12	Windward	17.73	21.50
				09/06/12	SoundEarth	18.36	20.87
				12/21/12	SoundEarth	18.19	21.04
				03/29/13	SoundEarth	18.22	21.01
Decommissioned							
W-MW-04 ⁽³⁾	Property	68 to 77	35.53	02/07/12	Windward	14.13	22.72
				09/06/12	SoundEarth	16.73	20.37
				12/21/12	SoundEarth	16.69	20.40
				03/29/13	SoundEarth	16.90	20.21
				Decommissioned			



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
MW101	Property	105 to 115	39.49	09/06/12	SoundEarth	21.48	18.01
				12/21/12	SoundEarth	21.14	18.35
				03/29/13	SoundEarth	22.22	17.27
				Decommissioned			
MW102	Property	115 to 125	49.19	09/05/12	SoundEarth	31.11	18.08
				12/21/12	SoundEarth	30.78	18.41
				03/29/13	SoundEarth	31.65	17.54
				01/06/14	SoundEarth	33.80	15.39
MW103	Alley Between 8th and 9th Avenue	103.5 to 113.5	35.92	09/05/12	SoundEarth	18.03	17.89
				12/21/12	SoundEarth	17.38	18.54
				03/29/13	SoundEarth	19.70	16.22
				01/06/14	SoundEarth	26.45	9.47
				06/16/15	SoundEarth	20.03	15.89
MW104	8th Avenue ROW	119 to 129	42.68	09/06/12	SoundEarth	24.72	17.96
				12/21/12	SoundEarth	24.31	18.37
				03/29/13	SoundEarth	25.78	16.90
				01/06/14	SoundEarth	28.87	13.81
MW105	Roy Street	130 to 140	44.69	09/05/12	SoundEarth	26.85	17.84
				12/21/12	SoundEarth	26.26	18.43
			44.17	03/29/13	SoundEarth	28.47	16.22
				01/06/14	SoundEarth	32.48	11.69
				04/02/15	SoundEarth	28.56	15.61
MW106	South-Adjoining	130 to 140	51.99	06/16/15	SoundEarth	28.59	15.58
				09/05/12	SoundEarth	34.09	17.90
				03/29/13	SoundEarth	34.92	17.07
				01/06/13	SoundEarth	37.15	14.84
MW107	8th Avenue ROW	35 to 45	43.82	12/21/12	SoundEarth	17.28	26.54
				03/29/13	SoundEarth	18.28	25.54
				01/06/14	SoundEarth	26.74	17.08
				06/16/15	SoundEarth	17.78	26.04
MW108	Alley Between 8th and 9th Avenue	40 to 50	32.78	12/21/12	SoundEarth	13.43	19.35
				03/29/13	SoundEarth	15.76	17.02
				01/06/14	SoundEarth	21.44	11.34
				06/16/15	SoundEarth	15.53	17.25
MW109	Alley Between 8th and 9th Avenue	35 to 45	34.97	12/21/12	SoundEarth	15.80	19.17
				03/29/13	SoundEarth	18.39	16.58
				01/06/14	SoundEarth	24.74	10.23
				06/16/15	SoundEarth	18.06	16.91
MW110	Alley Between 8th and 9th Avenue	35 to 45	39.67	12/21/12	SoundEarth	20.01	19.66
				03/29/13	SoundEarth	22.95	16.72
				01/06/14	SoundEarth	30.48	9.19
				04/22/15	SoundEarth	22.59	17.08
MW111	Alley Between 8th and 9th Avenue	70 to 80	36.48	06/16/15	SoundEarth	22.72	16.95
				12/21/12	SoundEarth	17.45	19.03
				03/29/13	SoundEarth	20.17	16.31
				01/06/14	SoundEarth	26.54	9.94
				04/22/15	SoundEarth	20.05	16.43
MW112	Dexter Ave ROW	75 to 85	57.49	06/16/15	SoundEarth	19.90	19.77
				12/21/12	SoundEarth	42.45	15.04
				03/29/13	SoundEarth	38.76	18.73
				01/06/14	SoundEarth	40.79	16.70
				06/16/15	SoundEarth	39.40	18.09



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
MW113	9th Avenue ROW	70 to 80	32.94	12/21/12	SoundEarth	14.15	18.79
				03/29/13	SoundEarth	16.95	15.99
				01/06/14	SoundEarth	23.35	9.59
				06/16/15	SoundEarth	16.46	16.48
MW114	South Adjoining	35 to 45	45.84	12/21/12	SoundEarth	16.50	29.34
				03/29/13	SoundEarth	19.54	26.30
				01/06/14	SoundEarth	25.93	19.91
				Destroyed			
MW115	9th Avenue N ROW	35 to 45	34.14	12/21/12	SoundEarth	15.26	18.88
				03/29/13	SoundEarth	18.34	15.80
				01/06/14	SoundEarth	26.08	8.06
				04/22/15	SoundEarth	16.49	17.65
				06/16/15	SoundEarth	17.72	16.42
MW116	9th Avenue N ROW	35 to 45	31.36	12/21/12	SoundEarth	12.24	19.12
				03/29/13	SoundEarth	14.65	16.71
				01/06/14	SoundEarth	20.30	11.06
				06/16/15	SoundEarth	14.54	16.82
MW117	Dexter Avenue N ROW	40 to 55	56.90	02/08/13	SoundEarth	27.46	29.44
				03/29/13	SoundEarth	27.81	29.09
				01/06/14	SoundEarth	30.54	26.36
MW118	South-Adjoining	40 to 50	52.91	03/25/13	SoundEarth	27.18	25.73
				03/29/13	SoundEarth	27.49	25.42
				01/06/14	SoundEarth	29.81	23.10
MW119	South-Adjoining	35 to 45	37.35	03/25/13	SoundEarth	22.21	15.14
				03/29/13	SoundEarth	22.52	14.83
				01/06/14	SoundEarth	32.12	5.23
				04/22/15	SoundEarth	21.12	16.23
				06/16/15	SoundEarth	21.12	16.23
MW120	8th Avenue N ROW	40 to 50	40.00	01/06/14	SoundEarth	22.80	17.20
				06/16/15	SoundEarth	18.10	21.90
MW121	8th Avenue N ROW	15 to 25	41.72	01/06/14	SoundEarth	18.69	23.03
MW122	Alley E of 800 Roy Street	105 to 119	30.03	01/06/14	SoundEarth	17.61	12.42
MW123	Westlake Ave N ROW	70 to 80	27.51	01/06/14	SoundEarth	15.69	11.82
MW124	Valley Street ROW	110 to 120	56.24	01/06/14	SoundEarth	40.50	15.74
MW125	Valley Street ROW	15 to 30	43.55	01/06/14	SoundEarth	24.18	19.37
MW126	Alley E of 800 Roy Street	85 to 95	30.94	01/06/14	SoundEarth	18.08	12.86
MW127	8th Avenue N ROW	40 to 50	39.04	01/06/14	SoundEarth	22.09	16.95
MW128	Westlake Avenue N	60 to 70	No TOC Survey	04/22/15	SoundEarth	12.91	--
BB-5	South-Adjoining	30 to 40	--	09/05/97	B&V	23.60	--
				09/09/97	B&V	23.90	--
				10/17/97	B&V	22.78	--
				11/17/97	B&V	23.40	--
				12/02/97	B&V	22.28	--
				01/21/98	B&V	23.85	--
				02/27/98	B&V	23.45	--
				03/25/98	B&V	22.86	--
				04/24/98	B&V	23.40	--
				06/05/98	B&V	23.56	--
				07/08/98	B&V	23.83	--
				07/27/98	B&V	24.25	--
08/25/98	B&V	24.42	--				
09/30/98	B&V	24.04	--				



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
BB-7	Westlake Ave N ROW	25 to 35	--	06/13/97	B&V	8.80	--
				06/20/97	B&V	8.40	--
				06/24/97	B&V	9.70	--
				11/17/97	B&V	9.44	--
				12/02/97	B&V	7.78	--
				01/22/98	B&V	9.83	--
				02/27/98	B&V	9.01	--
				03/25/98	B&V	8.98	--
				04/22/98	B&V	9.18	--
				06/05/98	B&V	9.39	--
				07/08/98	B&V	9.14	--
				07/27/98	B&V	9.55	--
				08/25/98	B&V	10.50	--
09/29/98	B&V	9.83	--				
BB-8	Roy Street ROW	30 to 40	--	06/20/97	B&V	17.49	--
				06/24/97	B&V	19.00	--
				10/06/97	B&V	20.40	--
				01/25/98	B&V	20.68	--
				02/28/98	B&V	20.20	--
				03/30/98	B&V	20.14	--
				04/22/98	B&V	19.99	--
				06/04/98	B&V	20.51	--
				07/27/98	B&V	24.02	--
			01/29/09	DOF	20.08	--	
			44.25	02/19/10	SoundEarth	18.66	25.59
			05/03/10	SoundEarth	19.90	24.35	
			06/02/11	SoundEarth	17.64	26.61	
			02/07/12	Windward	15.39	28.86	
			44.26	09/05/12	SoundEarth	20.01	24.25
			12/21/12	SoundEarth	16.23	28.03	
03/29/13	SoundEarth	18.70	25.56				
43.69	01/06/14	SoundEarth	24.42	19.27			
06/16/15	SoundEarth	18.90	24.79				
BB-8A	Roy Street ROW	Unknown	--	01/29/09	DOF	20.60	--
				02/19/10	SoundEarth	19.05	--
				05/03/10	SoundEarth	19.34	--
				06/02/11	SoundEarth	18.18	--
BB-10	Dexter Avenue N ROW	29 to 39	--	09/05/97	B&V	25.91	--
				09/09/97	B&V	25.70	--
				10/17/97	B&V	25.80	--
				11/13/97	B&V	25.30	--
				12/02/97	B&V	25.30	--
				01/21/98	B&V	25.88	--
				02/27/98	B&V	25.72	--
				03/25/98	B&V	25.53	--
				04/23/98	B&V	29.54	--
				06/05/98	B&V	26.20	--
				07/01/98	B&V	26.24	--
				07/27/98	B&V	26.85	--
08/25/98	B&V	27.27	--				
09/29/98	B&V	27.00	--				



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
BB-12	9th Avenue N ROW	35 to 45	--	03/25/98	B&V	14.89	--
				04/27/98	B&V	14.97	--
				05/19/98	B&V	15.01	--
				07/08/98	B&V	15.32	--
				07/28/98	B&V	15.68	--
				08/25/98	B&V	15.00	--
				09/29/98	B&V	14.78	--
			34.01	02/19/10	SoundEarth	16.33	17.68
05/02/10	SoundEarth	14.52	19.49				
BB12A	9th Avenue N ROW	Unknown	--	02/19/11	SoundEarth	14.40	--
				05/02/10	SoundEarth	15.81	--
BB-13	Westlake Ave N ROW	35 to 45	--	03/25/98	B&V	9.38	--
				04/23/98	B&V	8.76	--
				05/19/98	B&V	9.11	--
				07/08/98	B&V	9.00	--
				07/28/98	B&V	9.25	--
				09/29/98	B&V	8.00	--
				27.65	02/19/10	SoundEarth	9.50
			05/02/10	SoundEarth	9.13	18.52	
02/07/12	Windward	7.56	20.09				
BB-14	Location Unknow	40 to 60	--	03/25/98	B&V	8.38	--
				04/22/98	B&V	8.24	--
				05/19/98	B&V	8.29	--
				07/08/98	B&V	7.42	--
				07/28/98	B&V	9.03	--
				08/25/98	B&V	9.49	--
				09/29/98	B&V	6.14	--
TB-18	South-Adjoining	93 to 118	--	06/04/98	B&V	30.05	--
RS-20	800 Roy Street Parcel	Unknown	--	03/05/93	EPJ	≈ 10	--
MW-1	800 Roy Street Parcel	17.5 to 37.5	--	06/17/93	Retec	16.10	--
				Decommissioned on October 12, 1993			
MW-2	9th Avenue N ROW	27.5 to 37.5	--	06/17/93	Retec	15.55	--
				Decommissioned on October 12, 1993			
MW-3	800 Roy Street Parcel	17.5 to 37.5	--	06/17/93	Retec	15.17	--
				Decommissioned on October 12, 1993			
MW-4	800 Roy Street Parcel	22.5 to 32.5	--	06/17/93	Retec	15.80	--
				Decommissioned on October 12, 1993			
MW-5	8th Avenue N ROW	12.5 to 22.5	--	06/17/93	Retec	14.57	--
				Decommissioned on October 12, 1993			
MW-6	800 Roy Street Parcel	7 to 22	58.76	10/26/93	Retec	16.79	41.97
				01/25/94	Retec	17.43	41.33
				04/25/94	Retec	15.75	43.01
				09/15/94	Retec	16.61	42.15
			38.20	02/07/12	Windward	14.91	23.29
MW-7	800 Roy Street Parcel	9 to 18.5	55.82	10/26/93	Retec	14.10	41.72
				01/25/94	Retec	15.30	40.52
				04/25/94	Retec	13.40	42.42
				09/15/94	Retec	14.29	41.53
			35.09	02/07/12	Windward	12.56	22.53



Table 1
Summary of Groundwater Elevation Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Screen Interval (Feet Below Top of Casing)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater ⁽¹⁾	Groundwater Elevation ⁽²⁾
MW-8	800 Roy Street Parcel	4.5 to 19	53.72	10/26/93	Retec	12.35	41.37
				01/25/94	Retec	13.51	40.21
				04/25/94	Retec	11.80	41.92
				09/15/94	Retec	12.49	41.23
			33.19	02/07/12	Windward	11.64	21.55
MW-9	8th Avenue N ROW	7 to 22	61.35	01/25/94	Retec	15.51	45.84
				04/25/94	Retec	17.09	44.26
				09/15/94	Retec	15.50	45.85
			40.81	06/20/02	Urban	18.30	22.51
				06/02/11	SoundEarth	14.89	--
				02/07/12	Windward	16.39	24.42
				09/04/12	SoundEarth	16.84	23.97
				12/21/12	SoundEarth	15.94	24.87
01/06/14	SoundEarth	13.99	26.82				
MW-10	800 Roy Street Parcel	7 to 22	58.53	01/25/94	Retec	15.09	43.44
				04/25/94	Retec	16.64	41.89
				09/15/94	Retec	16.64	41.89
				06/20/02	Urban	16.55	41.98
			37.95	02/07/12	Windward	15.85	22.10
SCL-MW101	Alley E of 800 Roy Street	Unknown	30.46	02/07/12	Windward	7.48	22.98
				01/06/14	SoundEarth	13.09	17.37
SCL-MW102	800 Roy Street Parcel	Unknown	--	02/07/12	Windward	7.89	--
SCL-MW105	Alley E of 800 Roy Street	Unknown	31.26	02/07/12	Windward	10.46	20.80
				01/06/14	SoundEarth	13.88	17.38
SCS-1	800 Roy Street Parcel	Unknown	39.55	02/07/12	Windward	17.51	22.04
SCS-2	800 Roy Street Parcel	Unknown	39.16	02/07/12	Windward	16.56	22.60
SCS-3	800 Roy Street Parcel	Unknown	36.73	02/07/12	Windward	14.10	22.63
SCS-4	800 Roy Street Parcel	Unknown	35.33	02/07/12	Windward	12.93	22.40
SCS-5	800 Roy Street Parcel	Unknown	39.06	02/07/12	Windward	17.81	21.25

NOTES:

TOCs were surveyed relative to an established datum of 521.41 feet prior to 2012. TOCs resurveyed by Axis Survey and Mapping, of Kirkland, Washington, on March 16th, 2012, relative to an arbitrary benchmark of 499.89 feet above mean sea level, and by Bush, Roed & Hitchings, Inc. of Seattle, Washington, in February, October, and December 2012, and March 2013, using the North American Vertical Datum 1988.

⁽¹⁾As measured in feet below a fixed spot on the well casing rim.

⁽²⁾Calculated by subtracting the depth to groundwater from the casing elevation. Groundwater elevation in angled monitoring well calculated by subtracting the product of the measured depth to groundwater in the angled well by the sine of its angle.

(3)Monitoring well was installed at a 25 degree angle from the vertical point of penetration. Depth to groundwater measurements and sample interval account for angled length of well, not vertical depth. Groundwater elevations corrected to account for angle.

-- = not available/not collected
 B&V = Black & Veach
 DOF = Dalton, Olmsted & Fuglevand, Inc.
 EPJ = E.P. Johnson construction, Inc.
 GeoEngineers = GeoEngineers, Inc.
 Retec = Remediation Technologies, Inc.
 Roux = Roux Associates
 ROW = right-of-way
 SoundEarth = SoundEarth Strategies, Inc.
 TOC = top of casing
 Urban = Urban Redevelopment
 Windward = Windward Environmental LLC



Table 2
 Summary of Reconnaissance Groundwater Analytical Data
 700 Dexter Property
 700 Dexter Avenue North
 Seattle, Washington

DRAFT

Sample Location	Sample Location (For Filtering)	Sample Date	Sampled By	Sample Interval (Feet Below Top of Casing)	Analytical Results (µg/L)														
					GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	cis-1,2-DCE ⁽⁴⁾	trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾	1,1-DCE ⁽⁴⁾	Methylene Chloride ⁽⁴⁾	Naphthalene ⁽⁵⁾
B-2	B-2	06/23/00	ThermoRetec	11.5	--	--	--	<250	<250	<250	<500	37,000	600	4,100	<250	<250	<250	<500	--
B-6	B-6	06/24/00	ThermoRetec	14.5	--	--	--	<50	<50	<50	<100	6,800	54	57	<50	<50	<50	<100	--
B-7	B-7	06/24/00	ThermoRetec	12.5	--	--	--	<50	<50	<50	<100	21,000	310	880	<50	<50	<50	<100	--
B-8	B-8	06/24/00	ThermoRetec	8	--	--	--	--	--	--	--	3,100	<50	<50	NA	<50	NA	NA	NA
B-9	B-9	06/24/00	ThermoRetec	12	--	--	--	--	--	--	--	120,000	210	270	NA	<50	NA	NA	NA
B-10	B-10	06/24/00	ThermoRetec	12.5	--	--	--	--	--	--	--	9,100	1,100	7,600	NA	98	NA	NA	NA
W-MW-02	W-MW-02	01/30/12	Windward	10 to 20	--	--	--	<0.2	<0.2	<0.2	<0.6	1.6	1.4	8.0	0.3	0.3	<0.2	<1.0	<0.5
	W-MW-02	01/30/12	Windward	30 to 40	--	--	--	<20	<20	<20	<60	24,000	940	1,700	13 ^j	70	<20	<100	<50
	W-MW-02	01/30/12	Windward	50 to 60	--	--	--	<20	<20	<20	<60	7,200	1,300	1,800	<20	85	16 ^j	<100	<50
W-MW-04	W-MW-04	01/28/12	Windward	10 to 20	--	--	--	0.7	0.2 ^j	<0.2	0.3 ^j	19 ^t	8.4	37	0.4	37	0.1 ^j	<1.0	<0.5
	W-MW-04	01/28/12	Windward	30 to 40	--	--	--	0.2	0.2 ^j	<0.2	0.1 ^j	2,800 ^t	26	47	0.4	12	0.2	<1.0	<0.5
	W-MW-04	01/28/12	Windward	50 to 60	--	--	--	0.4	0.6	0.1 ^j	0.6 ^j	12,000 ^t	230	270	0.2	3.4	2.8	<1.0	<0.5
B101/MW101	B101/MW101	07/11/12	SoundEarth	75 to 80	--	--	--	--	--	--	--	32	<1	2.9	<1	<0.2	<1	<5	--
	B101/MW101	7/11/12 (dup)	SoundEarth	75 to 80	--	--	--	--	--	--	--	150	6.1	25	<1	1.1	<1	<5	--
	B101/MW101	07/12/12	SoundEarth	95 to 100	--	--	--	--	--	--	--	3.4	<1	<1	<1	<0.2	<1	<5	--
	B101/MW101	07/12/12	SoundEarth	110 to 120	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
	B101/MW101	07/12/12	SoundEarth	134 to 139	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
B102/MW102	B102/MW102	07/17/12	SoundEarth	25 to 30	--	--	--	--	--	--	--	5.0	2.5	9.0	<1	0.84	<1	<5	--
	B102/MW102 ⁽⁶⁾	07/17/12	SoundEarth	25 to 30	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
	B102/MW102	07/17/12	SoundEarth	45 to 50	--	--	--	--	--	--	--	<1	<1	2.4	<1	0.20	<1	<5	--
	B102/MW102 ⁽⁶⁾	07/17/12	SoundEarth	45 to 50	--	--	--	--	--	--	--	<1	<1	1.2	<1	<0.2	<1	<5	--
	B102/MW102	07/19/12	SoundEarth	85 to 90	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
	B102/MW102 ⁽⁶⁾	07/19/12	SoundEarth	85 to 90	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
B103/MW103	B103/MW103	07/25/12	SoundEarth	20 to 25	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
	B103/MW103 ⁽⁶⁾	07/25/12	SoundEarth	20 to 25	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
	B103/MW103	07/25/12	SoundEarth	35 to 40	--	--	--	--	--	--	--	1,800	860	400	2.4	42	2.6	<5	--
	B103/MW103 ⁽⁶⁾	07/25/12	SoundEarth	35 to 40	--	--	--	--	--	--	--	840	350	140	<1	14	<1	<5	--
	B103/MW103	07/26/12	SoundEarth	75 to 80	--	--	--	--	--	--	--	320	62	100	<1	3.4	<1	<5	--
	B103/MW103 ⁽⁶⁾	07/26/12	SoundEarth	75 to 80	--	--	--	--	--	--	--	170	50	85	<1	2.3	<1	<5	--
B104/MW104	B104/MW104	07/31/12	SoundEarth	55 to 60	--	--	--	0.77	3.4	<1	<3	900	150	480	<1	17	1.7	<5	--
	B104/MW104	07/31/12	SoundEarth	75 to 80	--	--	--	1.0	2.6	<1	<3	220	45	180	<1	6.1	<1	6.3 ^{kc}	--
	B104/MW104	08/01/12	SoundEarth	95 to 100	--	--	--	--	--	--	--	15	5.3	11	<1	0.24	<1	<5	--
B105/MW105	B105/MW105 ⁽⁶⁾	08/09/12	SoundEarth	75 to 80	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
	B105/MW105 ⁽⁶⁾	08/10/12	SoundEarth	95 to 100	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	<1	<5	--
B106/MW106	B106/MW106	08/14/12	SoundEarth	30 to 35	--	--	--	--	--	--	--	8.2	<1	1.0	<1	0.36	<1	<5	--
	B106/MW106	08/14/12	SoundEarth	45 to 50	--	--	--	--	--	--	--	1,100	110	210	<1	20	2.1	<5	--
	B106/MW106	08/15/12	SoundEarth	85 to 90	--	--	--	--	--	--	--	19	2.3	9.7	<1	0.62	<1	<5	--
DB01	DB01	03/18/13	SoundEarth	35 to 40	--	--	--	--	--	--	--	1.4	<1	2.4	<1	<0.2	<1	<5	--
DB02	DB02	03/18/13	SoundEarth	39 to 44	--	--	--	--	--	--	--	140	19	14	<1	0.35	<1	<5	--
DB03	DB03	03/27/13	SoundEarth	55 to 60	--	--	--	--	--	--	--	6,700	420	420	<1	12	5.8	<5	--
DB04	DB04	03/22/13	SoundEarth	55 to 60	--	--	--	--	--	--	--	15	<1	<1	<1	<0.2	<1	<5	--
DB05	DB05	03/26/13	SoundEarth	65 to 70	--	--	--	--	--	--	--	1,400	11	1.7	<1	<0.2	<1	<5	--
DB05A	DB05A	03/28/13	SoundEarth	40 to 45	--	--	--	--	--	--	--	230,000	790 ^{ne}	42	<1	1.2	4.8	<5	--
DB06	DB06	03/25/13	SoundEarth	75 to 80	--	--	--	--	--	--	--	170	4.4	5.0	<1	<0.2	<1	<5	--
DB07	DB07	03/28/13	SoundEarth	65 to 70	--	--	--	--	--	--	--	15,000	<1,000	<1,000	<1,000	<200	<1,000	<5,000	--
DB08	DB08	03/21/13	SoundEarth	55 to 60	--	--	--	--	--	--	--	7,300	1,100	1,300	<10	38	<10	<50	--
DB09	DB09	03/19/13	SoundEarth	35 to 40	--	--	--	--	--	--	--	5,000	400	700	3.1	4.8	2.0	<5	--
	DB09	03/19/13	SoundEarth	65 to 70	--	--	--	--	--	--	--	1,900	460	460	<1	2.3	1.3	<5	--
DB10	DB10	03/29/13	SoundEarth	35 to 40	--	--	--	--	--	--	--	200,000	1,700	<1,000	<1,000	<200	<1,000	<5,000	--
	DB10	04/01/13	SoundEarth	65 to 70	--	--	--	--	--	--	--	6,900	<100	<100	<100	<20	<100	<500	--
MTCA Cleanup Level					800 ⁽⁷⁾	500 ⁽⁷⁾	500 ⁽⁷⁾	5 ⁽⁷⁾	1,000 ⁽⁷⁾	700 ⁽⁷⁾	1,000 ⁽⁷⁾	5 ⁽⁷⁾	5 ⁽⁷⁾	16 ⁽⁸⁾	160 ⁽⁸⁾	0.2 ⁽⁷⁾	400 ⁽⁸⁾	5 ⁽⁷⁾	160 ⁽⁷⁾



Table 2
Summary of Reconnaissance Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample Location (For Filtering)	Sample Date	Sampled By	Sample Interval (Feet Below Top of Casing)	Analytical Results (µg/L)															
					GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	cis-1,2-DCE ⁽⁴⁾	trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾	1,1-DCE ⁽⁴⁾	Methylene Chloride ⁽⁴⁾	Naphthalene ⁽⁵⁾	
DB12	DB12	04/03/13	SoundEarth	10 to 15	--	--	--	--	--	--	--	170,000	4,800	3,100	<2,000	<400	<2,000	<10,000	--	
	DB12	04/03/13	SoundEarth	40 to 45	--	--	--	--	--	--	--	46,000	1,100	<1,000	<1,000	<200	<1,000	<5,000	--	
DB13	DB13	04/03/13	SoundEarth	10 to 15	--	--	--	--	--	--	--	2,500	100	160	1.8	<0.2	<1	<5	--	
	DB13	04/03/13	SoundEarth	40 to 45	--	--	--	--	--	--	--	8,200	800 ^{ve}	430 ^{ve}	<1	3.0	5.2	<5	--	
DB14	DB14	04/04/13	SoundEarth	10 to 15	7,200	--	--	100	<40	90	130	--	--	--	--	--	--	--	--	
	DB14	04/04/13	SoundEarth	40 to 45	--	--	--	--	--	--	--	470	210	840	<100	140	<100	<500	--	
B122/MW122	MW122	12/17/13	SoundEarth	25	--	--	--	29	1.5	2.5	3	<1	<1	<1	<1	<0.2	<1	<5	<1	
	MW122	12/17/13	SoundEarth	40	--	--	--	13	1.2	1.9	<3	<1	<1	120	<1	14	<1	<5	<1	
	MW122	12/17/13	SoundEarth	85	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	0.72	<1	<5	<1	
B124/MW124	MW124	12/19/13	SoundEarth	45	170	--	--	<0.35	<1	7.1	49.7	<1	<1	<1	<1	<0.2	<1	<5	<1	
	MW124	12/19/13	SoundEarth	60	--	--	--	<0.35	<1	20	144	<1	<1	<1	<1	<0.2	<1	<5	<1	
	MW124	12/19/13	SoundEarth	100	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2	<1	<5	<1	
B126/MW126	MW126	12/30/13	SoundEarth	40	--	--	--	3.5	2.4	3.6	<3	<1	<1	<1	<1	<0.2	<1	<5	2.0	
CHB-07	CHB-07	04/14/08	CH2M HILL	Unknown	<250	<250	<500	0.7	<0.2	<0.2	<0.6	<0.2	<0.2	480	1.8	220	0.3	<0.5	<0.5	
CHB-08	CHB-08	04/15/08	CH2M HILL	Unknown	<250	<250	<500	<0.2	<0.2	<0.2	<0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	
CHB-09	CHB-09	04/16/08	CH2M HILL	Unknown	<250	400	1,400	0.3	0.3	<0.2	<0.6	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	
RS-20	RS-20	03/05/93	EPJ	Unknown	99,000	--	--	96	230	1,500	7,000	<5	NA	NA	NA	NA	NA	NA	NA	
SCL-B101	SCL-B101	06/17/02	Urban	Unknown	<50	<250	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--	--	
SCL-B102	SCL-B102	06/17/02	Urban	Unknown	150	360	--	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	--	--	
CX/WS-1	CX/WS-1	11/01/89	HartCrowser	Unknown	<25 ^d	--	--	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	
MTCA Cleanup Level					800⁽⁷⁾	500⁽⁷⁾	500⁽⁷⁾	5⁽⁷⁾	1,000⁽⁷⁾	700⁽⁷⁾	1,000⁽⁷⁾	5⁽⁷⁾	5⁽⁷⁾	16⁽⁸⁾	160⁽⁸⁾	0.2⁽⁷⁾	400⁽⁸⁾	5⁽⁷⁾	160⁽⁷⁾	

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater.

Red denotes concentration exceeds the MTCA cleanup level.

⁽¹⁾ Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Gx.

⁽²⁾ Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Dx.

⁽³⁾ Analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C.

⁽⁴⁾ Analyzed by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.

⁽⁵⁾ Analyzed by EPA Methods 8010, 8260B, 8260C, 8270, 8270D, or 8270D-SIM.

⁽⁶⁾ Samples were field-filtered prior to laboratory analysis.

⁽⁷⁾ MTCA Method A Cleanup Levels, Table 720-1, Section 900, Chapter 173-340 of the WAC, revised November 2007.

⁽⁸⁾ CLARC, Groundwater, Method B, Non Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>. Revised May 2014.

Laboratory Notes:

^d Result reported as total petroleum hydrocarbons.

^j Estimated concentration.

^k The presence of the compound indicated is likely due to laboratory contamination.

[†] Analyte also detected in trip blank.

^{ve} Estimated concentration is calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

µg/L = micrograms per liter

DCE = dichloroethylene

DRPH = diesel-range petroleum hydrocarbons

dup = duplicate

EPA = U.S. Environmental Protection Agency

EPJ = E.P. Johnson construction, Inc.

GRPH = gasoline-range petroleum hydrocarbons

Hart Crowser = Hart Crowser, Inc.

HCID = hydrocarbon identification

MTCA = Washington State Model Toxics Control Act

NA = results not available

NWTPH = northwest total petroleum hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

ROW = right-of-way

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

ThermoRetec = ThermoRetec Corporation

TPH = total petroleum hydrocarbons

Urban = Urban Redevelopment

WAC = Washington Administrative Code

Windward = Windward Environmental LLC



Table 3
Summary of On-Property Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
				GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	cis-1,2-DCE ⁽⁴⁾	trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾
Shallow Wells															
R-MW1	10/24/92	Roux	Unknown	57	1,345	6,000	1	1	<0.5	<0.5	<5	<5	--	<5	100
	10/24/92	DOF	Unknown	53	26,000	12,000	0.61	0.83	<0.50	<1.0	4.2	0.82	12 ^c	--	170
	10/24/92	Roux	Unknown	54	290	5,000	0.58	1	<0.5	<0.5	2.3	<2	14	NA	140
	01/29/09	DOF	Peristaltic	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	17.1	4.26	1.60	<0.200	0.630
	06/02/11	SoundEarth	Peristaltic	<100	1,000 ^x	740	<0.35	<1	<1	<3	7.9	2.7	1.9	<1	0.68
	09/05/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	16	3.6	2.1	<1	2.2
Decommissioned															
R-MW2	10/24/92	Roux	Unknown	4,200	34	2,000	684	17	301	403	<5	<5	--	<5	<5
	10/24/92	DOF	Unknown	4,000	16,000	25,000	310	<0.50	140	180	--	--	--	--	--
	01/29/09	DOF	Peristaltic	657	--	--	<0.500	0.557	0.513	2.08	5.05	<0.200	<0.200	<0.200	<0.200
	06/02/11	SoundEarth	Peristaltic	1,700	3,100	290 ^x	19	<1	<1	<3	<1	<1	<1	<1	<0.2
	09/04/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
R-MW3	10/24/92	Roux	Unknown	87	3,015	1,200	<0.5	<0.5	<0.5	<0.5	<5	<5	--	<5	<5
	10/24/92	DOF	Unknown	<50	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--
	01/29/09	DOF	Peristaltic	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	4.26	<0.200	<0.200	<0.200	<0.200
	06/02/11	SoundEarth	Peristaltic	<100	240 ^x	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
	09/04/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	6.4	<1	<1	<1	<0.2
G-MW2	07/24/01	GeoEngineers	Peristaltic	--	--	--	0.375	48.3 ^E	2.01	12.88	176,000	237 ^B	129 ^B	1.02	0.457
	01/29/09	DOF	Peristaltic	39,600 ^{BP}	--	--	<20.0	<20.0	<20.0	48.9	59,000 ^F	210	373	1.33	<0.200
	06/02/11	SoundEarth	Peristaltic	59,000 ^{X,Y}	200	<250	<350	<1,000	<1,000	<3,000	150,000	<1,000	<1,000	<1,000	<200
	09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	12	1.1	4.7	150,000	320	260	1.4	<0.2
	Decommissioned														
F5	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	120,000	1,100	700	5.2	4.2
	10/24/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	21,000	1,200	1,000	1,000	<200
F9	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	140,000	3,400	1,100	8.6	78
	06/16/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	3.7	1.8	680	12	74
F13	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	2,900	280	370	<100	49
	10/24/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	7,300	3,100	490	<50	<10
	11/18/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	67,000	6,600	3,200	85	48
	12/12/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,100	340	670	<10	20
	03/07/14	SoundEarth	Peristaltic	--	--	--	--	--	--	--	84	11	9.6	<1	0.36
	06/16/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	8.4	<1	1.8	<1	0.31
G12	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	64,000	3,100	9,200	88	130
	10/24/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,700	150	<100	<100	<20
	11/18/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	760	84	42	<10	<2
J5	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	46,000	660	<100	<100	<20
	10/24/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	48,000	13,000	1,400	<100	<20
	06/16/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,100	340	250	51	1.0
J15	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	4,100	220	580	6.8	20
	10/24/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	10,000	1,100	680	<100	<20
	03/07/14	SoundEarth	Peristaltic	--	--	--	--	--	--	--	2,200	170	120	<50	<10
	06/16/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	9.0	12	310	8.8	3.1
MTCA Cleanup Level				800⁽⁵⁾	500⁽⁵⁾	500⁽⁵⁾	5⁽⁵⁾	1,000⁽⁵⁾	700⁽⁵⁾	1,000⁽⁵⁾	5⁽⁵⁾	5⁽⁵⁾	16⁽⁶⁾	160⁽⁶⁾	0.2⁽⁵⁾



Table 3
Summary of On-Property Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
				GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	cis-1,2-DCE ⁽⁴⁾	trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾
Shallow Wells															
K8	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	8,700	330	1,400	5.6	6.3
	06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	63	16	500	67	<2
M15	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	3,200	110	180	1.7	0.22
	03/07/14	SoundEarth	Peristaltic	--	--	--	--	--	--	--	2,100	190	290	2.9	2.6
	10/24/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	56,000	1,100	770	<50	<10
N7	06/16/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	58	44	76	2.7	1.1
	07/19/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	640	50	18	<1	<0.2
Intermediate Wells															
W-MW-03	02/03/12	Windward	Bladder	--	--	--	<20	<20	<20	<60	5,300	220	160	<20	<20
	09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	13	2.6	20	<1	120
Decommissioned															
W-MW-04 ⁽⁷⁾	02/03/12	Windward	Bladder	--	--	--	<20	<20	<20	<60	5,400	160	54	<20	<20
	09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	460	440	1,900	4.0	630
Decommissioned															
G-MW1	07/24/01	GeoEngineers	Peristaltic	--	--	--	0.449	17.6 ^E	0.798	5.52	85,500	1,130	23.3 ^B	0.956	74.5 ^B
	01/29/09	DOF	Peristaltic	41,300 ^{OP}	--	--	<20.0	<20.0	28.6	55.1	78,400 ^F	1,160	34.4	1.49	<0.200
	06/03/11	SoundEarth	Peristaltic	29,000 ^X	92 ^X	<250	--	--	--	--	78,000	1,100	22	--	33
	09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	7.4	<1	1.1	66,000	1,100	32	1.5	35
	09/06/12 (dup)	SoundEarth	Peristaltic	--	--	--	<0.35	7.6	<1	1.0	64,000	1,100	30	1.4	33
Decommissioned															
G-MW3	07/24/01	GeoEngineers	Peristaltic	--	--	--	0.524	6.93 ^F	0.459	2.10	47,700	385 ^B	<0.200	3.71	42.5 ^B
	12/10/04	DOF	Bailer	--	--	--	<2	7	<2	2	220,000	1,200	570	6	19
	01/29/09	DOF	Peristaltic	26,600 ^{OP}	--	--	<12.5	<12.5	<12.5	<25.0	64,000 ^F	1,580	4,050	13.9	<0.200
	06/02/11	SoundEarth	Peristaltic	19,000 ^{X,Y}	210 ^X	<250	<350	<1,000	<1,000	<3,000	33,000	1,400	1,500	<1,000	290
	09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	1.5	<1	<3	31,000	1,200	1,600	5.9	290
Decommissioned															
Deep Well															
MW101	07/20/12	SoundEarth	Bladder	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2
	09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	1.4	<1	<3	<1	<1	<1	<1	<0.2
Decommissioned															
MTCA Cleanup Level				800⁽⁵⁾	500⁽⁵⁾	500⁽⁵⁾	5⁽⁵⁾	1,000⁽⁵⁾	700⁽⁵⁾	1,000⁽⁵⁾	5⁽⁵⁾	5⁽⁵⁾	16⁽⁶⁾	160⁽⁶⁾	0.2⁽⁵⁾

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater.

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾ Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Gx.

⁽²⁾ Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Dx.

⁽³⁾ Analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C.

⁽⁴⁾ Analyzed by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.

⁽⁵⁾ MTCA Method A Cleanup Levels, Table 720-1, Section 900, Chapter 173-340 of the WAC, revised November 2007.

⁽⁶⁾ CLARC, Groundwater, Method B, Non Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>. Revised May 2014.

⁽⁷⁾ Monitoring well was installed at a 25 degree angle from the vertical point of penetration.

Laboratory Notes:

^R Reported as total 1,2,-DCE, which is sum of cis-1,2- and trans-1,2-DCE isomers.

^E Estimated value. The reported range exceeds the calibration range of the analysis.

^F Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.

^B Estimated value. The reported range exceeds the calibration range of the analysis.

^{OP} Hydrocarbon result partly due to individual peak(s) in quantitation range.

^X The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

^Y The GRPH result in the sample is due to a pattern of peaks that is consistent with the chlorinated volatiles detected by the 8260C analysis.

-- = not analyzed or not measured

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

DOF = Dalton, Olmsted & Fuglevand, Inc.

DRPH = diesel-range petroleum hydrocarbons

dup = duplicate

EPA = U.S. Environmental Protection Agency

GeoEngineers = GeoEngineers, Inc.

GRPH = gasoline-range petroleum hydrocarbons

HCID = hydrocarbon identification

MTCA = Washington State Model Toxics Control Act

NWTPH = northwest total petroleum hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

Roux = Roux Associates

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

WAC = Washington Administrative Code

Windward = Windward Environmental LLC



Table 4
Summary of Intermediate Water-Bearing Zone Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
					GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	cis-1,2-DCE ⁽⁴⁾	trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾
W-MW-01	8th Avenue N ROW	02/02/12	Windward	Bladder	--	--	--	<20	0.1 ¹	<0.2	<0.6	46	3.9	11	<0.2	0.5
		09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	1.7	<1	<3	<1	<1	2.0	<1	2.8
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	<1	<1	0.46
W-MW-02	8th Avenue Nnuw N ROW	02/03/12	Windward	Bladder	--	--	--	<20	<20	<20	<60	6,900	1,700	2,000	<20	120
		08/13/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	3,000	1,300	2,200	4.1	66
		09/05/12	SoundEarth	Peristaltic	--	--	--	<0.35	1.4	<1	<3	2,600	1,300	2,800	5.0	69
		01/03/14	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	490	1,200	4,400	7.3	67
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<10	<10	13,000	95	2,400
W-MW-03	Property	02/03/12	Windward	Bladder	--	--	--	<20	<20	<20	<60	5,300	220	160	<20	<20
		09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	13	2.6	20	<1	120
W-MW-04 ⁽⁵⁾	Property	Decommissioned														
		02/03/12	Windward	Bladder	--	--	--	<20	<20	<20	<60	5,400	160	54	<20	<20
		09/06/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	460	440	1,900	4.0	630
MW107	8th Avenue Nnuw N ROW	Decommissioned														
		12/21/12	SoundEarth	Peristaltic	240,000 ^{x,y}	190 ^x	<250	<3.5	<10	<10	<30	47,000	2,800	5,100	41	200
		12/21/12 (dup)	SoundEarth	Peristaltic	--	--	--	--	--	--	--	50,000	3,000	5,200	44	270
		12/16/13	SoundEarth	Peristaltic	--	--	--	0.37	1.8	<1	3.3	32,000	2,400	4,000	34	76
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,900	5,000	5,000	<100	40
MW108	Alley Between 8th and 9th Avenue N	12/21/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	3.4	1.8	400	2.1	210 ^{pr}
		12/17/13	SoundEarth	Peristaltic	--	--	--	1.9	<1	<1	<3	3.8	4.6	360	3.6	150
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	4.0	11	370	3.5	260
MW109	Alley Between 8th and 9th Avenue N	12/21/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	91	64	18	<1	1.5
		12/17/13	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	4.0	18	310	<1	27
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	370	890	520	1.2	26
MW110	Alley Between 8th and 9th Avenue N	12/21/12	SoundEarth	Bladder	--	--	--	--	--	--	--	1,100	220	470	3.0	33
		12/19/13	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	930	240	840	3.9	31
		04/22/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,000	210	340	2.4	1
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,000	200	470	<10	12
MW111	Alley Between 8th and 9th Avenue N	12/21/12	SoundEarth	Bladder	--	--	--	--	--	--	--	110	32	37	<1	1.8
		12/17/13	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	4.7	<1	17
		04/22/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	1.7	<1	18
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	1.5	<1	20
MW112	Dexter Avenue N ROW	12/21/12	SoundEarth	Bladder	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2
		12/26/13	SoundEarth	Bladder	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
MW114	Adjacent to Mercer Street	12/21/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	1,400	290	260	<1	14
		12/18/13	SoundEarth	Peristaltic	--	--	--	<17	<50	<50	<150	8,400	1,300	640	<50	22
MW115	9th Avenue N ROW	12/13/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	15	1.1	3.0	<1	2.6
		12/21/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	3.0	38	<1	16
		12/19/13	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	0.75
		04/21/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	17	170	<1	20
MW116	9th Avenue N ROW	06/25/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	<1	<1	6.2
		12/07/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	6.8	<1	<1	<1	<0.2
		12/21/12	SoundEarth	Peristaltic	--	--	--	--	--	--	--	2.7	<1	<1	<1	<0.2
		12/19/13	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
MTCA Cleanup Level					800⁽⁶⁾	500⁽⁶⁾	500⁽⁶⁾	5⁽⁶⁾	1,000⁽⁶⁾	700⁽⁶⁾	1,000⁽⁶⁾	5⁽⁶⁾	5⁽⁶⁾	16⁽⁷⁾	160⁽⁷⁾	0.2⁽⁶⁾



Table 4
Summary of Intermediate Water-Bearing Zone Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Area Location	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)												
					GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	cis-1,2-DCE ⁽⁴⁾	trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾	
MW117	Dexter Avenue N ROW	02/08/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2
		12/18/13	SoundEarth	Peristaltic	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	<1	<0.2
MW118	South-Adjoining	03/25/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2
		12/18/13	SoundEarth	Peristaltic	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	<1	<0.2
MW119	South-Adjoining	03/25/13	SoundEarth	Peristaltic	--	--	--	--	--	--	--	--	<1	<1	3.3	<1	<0.2
		12/19/13	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	2.5	<1	0.76	
		04/21/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	34	42	50	<1	3.1	
		06/17/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	4.9	7.1	52	<1	2.7	
MW120	8th Avenue N ROW	12/19/13	SoundEarth	Peristaltic	<100	<50	440 ^x	<0.35	<1	<1	<3	2.8	2.3	19	<1	9.6	
		06/16/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	4.3	<1	<0.2	
MW126	Alley E of 800 Roy Street	01/03/14	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2	
MW127	8th Avenue N ROW	01/03/14	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	0.29	
		01/13/14	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	0.30	
PW-1	Unknown	1997 (8 hour)	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	1.0	ND	ND	ND	ND	
		1997 (Final)	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BB-5	South of Mercer Street ROW	11/17/97	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	ND	ND	1.1	ND	ND	
BB-7	Westlake Ave N ROW	11/17/97	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	ND	ND	ND	ND	ND	
BB-8	Roy Street ROW	06/24/97	B & V	Bailer	<200	<500	<1,000	1.8	1.3	<1.0	<1.0	11,000	1,500	4,200	14	280	
		01/29/09	DOF	--	499	--	--	0.694	<0.500	<0.500	<1.00	896^f	258	441	2.45	1.48	
		05/03/10	SoundEarth	Peristaltic	--	--	--	--	--	--	--	510	120	110	<1	0.27	
		06/02/11	SoundEarth	Peristaltic	130 ^{xy}	<50	<250	<0.35	<1	<1	<3	170	59	44	<1	<0.2	
		09/05/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	200	41	28	<1	<0.2	
		12/29/13	SoundEarth	Bladder	--	--	--	<0.35	<1	<1	<3	200	38	24	<1	<0.2	
BB-10	Dexter Avenue N ROW	11/13/97	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	ND	ND	ND	ND		
BB-12	9th Avenue N ROW	05/19/98	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	ND	ND	540	ND	380	
		05/02/10	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	
BB-13	Westlake Ave N ROW	1998	B & V	Bailer	<250	<630	<630	ND	ND	ND	ND	ND	ND	2.6	ND	1.1	
		05/02/10	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	
BB-14	?	1998	B & V	Bailer	<300	<630	<630	--	--	--	--	--	--	--	--	--	
MTCA Cleanup Level					800⁽⁶⁾	500⁽⁶⁾	500⁽⁶⁾	5⁽⁶⁾	1,000⁽⁶⁾	700⁽⁶⁾	1,000⁽⁶⁾	5⁽⁶⁾	5⁽⁶⁾	16⁽⁷⁾	160⁽⁷⁾	0.2⁽⁶⁾	

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater.

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Gx.

⁽²⁾Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Dx.

⁽³⁾Analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C.

⁽⁴⁾Analyzed by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.

⁽⁵⁾Monitoring well was installed at a 25 degree angle from the vertical point of penetration.

⁽⁶⁾MTCA Method A Cleanup Levels, Table 720-1, Section 900, Chapter 173-340 of the WAC, revised November 2007.

⁽⁷⁾CLARC, Groundwater, Method B, Non Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>. Revised May 2014.

Laboratory Notes:

^fAnalyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.

^eEstimated concentration.

^oThe sample was received with incorrect preservation. The value reported should be considered an estimate.

^xThe sample chromatographic pattern does not resemble the fuel standard used for quantitation.

^yThe GRPH result in the sample is due to a pattern of peaks that is consistent with the chlorinated volatiles detected by the 8260C analysis.

-- = not analyzed or not measured

<= not detected at a concentration exceeding the laboratory reporting limit

B & V = Black & Veatch

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

DOF = Dalton, Olmsted & Fuglevand, Inc.

DRPH = diesel-range petroleum hydrocarbons

dup = duplicate

EPA = U.S. Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

HCID = hydrocarbon identification

MTCA = Washington State Model Toxics Control Act

ND = not detected at a concentration exceeding laboratory reporting limit; detection limit not provided

NWTPH = northwest total petroleum hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

ROW = right-of-way

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

WAC = Washington Administrative Code

Windward = Windward Environmental LLC



Table 5
Summary of Deep Water-Bearing Zone Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Area Location	Sample Date	Sampled By	Analytical Results ⁽¹⁾ (micrograms per liter)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
MW101	Property	07/20/12	SoundEarth	<1	<1	<1	<1	<0.2
		09/06/12	SoundEarth	<1	<1	<1	<1	<0.2
MW102	Valley Street ROW	08/16/12	SoundEarth	<1	<1	<1	<1	<0.2
		09/05/12	SoundEarth	<1	<1	<1	<1	<0.2
		12/17/13	SoundEarth	<1	<1	<1	<1	<0.2
MW103	Alley South of 8th Avenue N	07/31/12	SoundEarth	12	25	150	<10	79
		09/05/12	SoundEarth	8.3	22	80	<1	110
		09/05/12 (dup)	SoundEarth	8.1	22	85	<1	120
		12/18/13	SoundEarth	4.3	6.1	8.6	<1	1.2
		12/18/13 (dup)	SoundEarth	4.0	5.2	7.1	<1	0.94
		06/17/15	SoundEarth	1.8	1.4	<1	<1	0.94
MW104	8th Avenue N ROW	08/16/12	SoundEarth	<1	<1	<1	<1	<0.2
		09/06/12	SoundEarth	<1	<1	<1	<1	<0.2
		12/17/13	SoundEarth	<1	<1	<1	<1	<0.2
MW105	Roy Street ROW	08/16/12	SoundEarth	<1	<1	<1	<1	0.32
		09/05/12	SoundEarth	<1	<1	<1	<1	0.23
		12/29/13	SoundEarth	<1	<1	<1	<1	<0.2
		04/12/15	SoundEarth	1.2	1.6	<1	<1	<0.2
		06/17/15	SoundEarth	<1	<1	<1	<1	<0.2
MW106	West of Roy Street	08/22/12	SoundEarth	<1	<1	<1	<1	<1
		09/05/12	SoundEarth	<1	<1	<1	<1	<0.2
		12/17/13	SoundEarth	<1	<1	<1	<1	<0.2
MW113	9th Avenue N ROW	12/21/12	SoundEarth	1.3 ³	440	5,500	4.1	150
		12/19/13	SoundEarth	<1	13	140	<1	0.41
		06/25/15	SoundEarth	<1	19	670	<1	17
TB-18	South-Adjoining	06/04/98	B & V	ND	ND	ND	ND	ND
MW122	Alley E of 800 Roy Street	12/23/13	SoundEarth	<1	<1	<1	<1	<0.2
MW123	Westlake Ave N ROW	12/23/13	SoundEarth	<1	<1	<1	<1	<0.2
MW124	Valley Street ROW	12/26/13	SoundEarth	<1	<1	<1	<1	<0.2
MTCA Cleanup Level				5⁽²⁾	5⁽²⁾	16⁽³⁾	160⁽³⁾	0.2⁽²⁾

NOTES:

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Analyzed by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.

⁽²⁾MTCA Method A Cleanup Levels, Table 720-1, Section 900, Chapter 173-340 of the WAC, revised November 2007.

⁽³⁾CLARC, Groundwater, Method B, Non Cancer, CLARC website -

<<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>. Revised May 2014.

Laboratory Notes:

The presence of the analyte indicated may be due to carryover from previous sample injections.

< = not detected at a concentration exceeding the laboratory reporting limit

B & V = Black & Veatch B & V = Black & Veatch

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

dup = duplicate

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

ND = not detected at a concentration exceeding laboratory reporting limit; detection limit not provided

PCE = tetrachloroethylene

ROW = right-of-way

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

WAC = Washington Administrative Code



Table 6
Summary of Additional Off-Property Wells Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
					GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	Cis-1,2-DCE ⁽⁴⁾	Trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾
Shallow Wells																
R-MW5	Dexter Avenue N ROW	10/28/92	Roux	Unknown	93	86	<1,000	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5
		01/29/09	DOF	Peristaltic	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	0.800	<0.200	<0.200	<0.200	<0.200
		06/02/11	SoundEarth	Peristaltic	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
		09/05/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
		12/18/13	SoundEarth	Peristaltic	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
R-MW6	8th Avenue N ROW	10/28/92	Roux	Unknown	<50	<50	<1,000	<0.5	2	<0.5	2	4,500	920	2,600	NA	240
		11/03/92	DOF	Unknown	--	--	--	--	--	--	--	690	160	620	NA	<40
		01/29/09	DOF	Peristaltic	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	1.78	<0.200	2.64	<0.200	2.75
		05/03/10	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	1.2	<1	2.8
		06/02/11	SoundEarth	Peristaltic	<100	120 ^x	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	2.1
MW-6	800 Roy Street Parcel	10/12/93	Retec	Unknown	150,000	--	--	9,100	6,800	2,600	7,300	--	--	--	--	--
		10/26/93	Retec	Unknown	100,000	--	--	17,000	14,000	1,400	11,000	--	--	--	--	--
		01/25/94	Retec	Unknown	66,000	--	--	8,800	4,600	1,500	8,100	--	--	--	--	--
		04/25/94	Retec	Unknown	120,000	--	--	15,000	7,200	2,600	13,300	--	--	--	--	--
		09/15/94	Retec	Unknown	56,000	--	--	15,000	2,000	1,500	7,100	--	--	--	--	--
		06/20/02	Urban	Unknown	8,500	--	--	1,900	14	250	53	--	--	--	--	--
MW-7	800 Roy Street Parcel	10/12/93	Retec	Unknown	75,000	--	--	20,000	22,000	3,000	15,000	--	--	--	--	--
		10/26/93	Retec	Unknown	74,000	--	--	8,300	7,400	1,100	8,300	--	--	--	--	--
		01/25/94	Retec	Unknown	53,000	--	--	1,600	2,700	1,400	5,100	--	--	--	--	--
		04/25/94	Retec	Unknown	140,000	--	--	3,900	7,400	3,100	14,100	--	--	--	--	--
		09/15/94	Retec	Unknown	66,000	--	--	3,400	2,700	1,900	7,700	--	--	--	--	--
		9/15/94 (dup)	Retec	Unknown	77,000	--	--	3,600	3,000	2,100	8,700	--	--	--	--	--
MW-8	800 Roy Street Parcel	06/20/02	Urban	Unknown	8,400	--	--	650	37	470	150	--	--	--	--	--
		10/26/93	Retec	Unknown	280	--	--	19	1	<1	48	--	--	--	--	--
		01/25/94	Retec	Unknown	230 ^j	--	--	13	0.7 ^j	<1	4.5	--	--	--	--	--
		1/25/94 (dup)	Retec	Unknown	210 ^j	--	--	12	0.6 ^j	<1	3.7	--	--	--	--	--
		04/25/94	Retec	Unknown	<250	--	--	2.2	<1	<1	1.7	--	--	--	--	--
		09/15/94	Retec	Unknown	210 ^j	--	--	<1	0.5 ^j	<1	1.6 ^j	--	--	--	--	--
		9/15/94 (dup)	Retec	Unknown	250	--	--	<1	0.5 ^j	<1	1.7 ^j	--	--	--	--	--
MW-9	8th Avenue N ROW	06/21/02	Urban	Unknown	<50	--	--	<1	<1	<1	<1	--	--	--	--	--
		10/26/93	Retec	Unknown	210 ^j	--	--	9.5	1.3	<1	<2	--	--	--	--	--
		01/25/94	Retec	Unknown	<250	--	--	5.7	1.1	<1	<2	--	--	--	--	--
		04/25/94	Retec	Unknown	<250	--	--	<0.001	<1	<1	<2	--	--	--	--	--
		09/15/94	Retec	Unknown	<250	--	--	3.5	0.6 ^j	<1	<2	--	--	--	--	--
		06/20/02	Urban	Unknown	<50	--	--	<1	<1	<1	<2	<1	<1	<1	<1	<1
		06/02/11	SoundEarth	Peristaltic	<100	150 ^x	<250	<1	<1	<1	<3	--	--	--	--	--
MW-10	800 Roy Street Parcel	09/04/12	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	<1	<1	0.61
		12/16/13	SoundEarth	Peristaltic	<100	<50	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	<0.2
		10/26/93	Retec	Unknown	<250	--	--	<1	1.3	<1	<2	--	--	--	--	--
		01/25/94	Retec	Unknown	190 ^j	--	--	<1	3.2	<1	<2	--	--	--	--	--
		04/25/94	Retec	Unknown	<250	--	--	<1	2.5	<1	<2	--	--	--	--	--
MW121	8th Avenue N ROW	09/15/94	Retec	Unknown	<250	--	--	<1	0.9 ^j	<1	<2	--	--	--	--	--
		06/20/02	Urban	Unknown	<50	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1
		12/26/13	SoundEarth	Peristaltic	<100	200 ^x	<250	<0.35	<1	<1	<3	<1	<1	<1	<1	1.3
MW125	Valley Street ROW	12/26/13	SoundEarth	Peristaltic	<100	300 ^x	<250	1.4	<1	<1	<3	<1	<1	<1	<1	<0.2
MTCA Cleanup Level					800⁽⁵⁾	500⁽⁵⁾	500⁽⁵⁾	5⁽⁵⁾	1,000⁽⁵⁾	700⁽⁵⁾	1,000⁽⁵⁾	5⁽⁵⁾	5⁽⁵⁾	16⁽⁶⁾	160⁽⁶⁾	0.2⁽⁵⁾



Table 6
Summary of Additional Off-Property Wells Groundwater Analytical Data
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Property	Sample Date	Sampled By	Sampling Method	Analytical Results (micrograms per liter)											
					GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	Cis-1,2-DCE ⁽⁴⁾	Trans-1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾
Deep Well																
MW128	Westlake Ave N ROW	01/13/14	SoundEarth	Peristaltic	--	--	--	<0.35	<1	<1	<3	<1	<1	960 ^{ve}	<1	290 ^{ve}
		04/22/15	SoundEarth	Peristaltic	--	--	--	--	--	--	--	<1	<1	150	<1	59
Decommissioned Wells - Shallow																
R-MW4	Roy Street ROW	10/24/92	Roux	Unknown	410	201	<1,000	<0.5	2	1	4	814	64	--	<5	<5
		10/24/92	DOF	Unknown	640	--	--	<0.5	1.8	<0.5	3.1	31	2.8	<2.0	NA	<2.0
Decommissioned before 2009																
MW-1	800 Roy Street Parcel	03/22/93	EPJ	Bailer	5,100	<500	<1,000	10,000	270	480	427	--	--	--	--	--
		06/17/93	Retec	Unknown	--	--	--	20,000	14,000	840	6,700	--	--	--	--	--
Decommissioned on October 12, 1993																
MW-2	8th Avenue N ROW	03/22/93	EPJ	Bailer	650	<500	<1,000	100	42	24	67	--	--	--	--	--
		06/17/93	Retec	Unknown	--	--	--	28	7.2	<1	<2	170	1,400	9,300	25	1,100
Decommissioned on October 12, 1993																
MW-3	800 Roy Street Parcel	03/22/93	EPJ	Bailer	27,000	<500	<1,000	1,500	3,300	690	3,500	--	--	--	--	--
		06/17/93	Retec	Unknown	--	--	--	4,800	21,000	1,900	12,300	--	--	--	--	--
Decommissioned on October 12, 1993																
MW-4	800 Roy Street Parcel	03/22/93	EPJ	Bailer	940	<500	<1,000	82	390	39	108	--	--	--	--	--
		06/17/93	Retec	Unknown	--	--	--	<1	<1	<1	<2	--	--	--	--	--
Decommissioned on October 12, 1993																
MW-5	8th Avenue N ROW	03/22/93	EPJ	Bailer	670	<500	<1,000	49	140	9.8	80	--	--	--	--	--
		06/17/93	Retec	Unknown	--	--	--	<1	<1	<1	<2	--	--	--	--	--
Decommissioned on October 12, 1993																
Decommissioned Wells - Intermediate																
BB-8A	Roy Street ROW	01/29/09	DOF	Peristaltic	669	--	--	<0.500	<0.500	<1.00	1,290 ^f	285	549	2.96	3.86	
		05/03/10	SoundEarth	Peristaltic	--	--	--	--	--	--	810	180	140	1.6	0.78	
		06/02/11	SoundEarth	Peristaltic	380 ^{xv}	<50	<250	<3.5	<10	<10	<30	710	170	170	<10	<2
BB12A	9th Avenue N ROW	05/02/10	SoundEarth	Peristaltic	--	--	--	--	--	--	<1	<1	<1	<1	<0.2	
MTCA Cleanup Level					800⁽⁵⁾	500⁽⁵⁾	500⁽⁵⁾	5⁽⁵⁾	1,000⁽⁵⁾	700⁽⁵⁾	1,000⁽⁵⁾	5⁽⁵⁾	5⁽⁵⁾	16⁽⁶⁾	160⁽⁶⁾	0.2⁽⁵⁾

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for groundwater.

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Gx.

⁽²⁾Analyzed by EPA Method 418.1 or 8015-M, NWTPH-HCID, or NWTPH-Dx.

⁽³⁾Analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C.

⁽⁴⁾Analyzed by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.

⁽⁵⁾MTCA Method A Cleanup Levels, Table 720-1, Section 900, Chapter 173-340 of the WAC, revised November 2007.

⁽⁶⁾CLARC, Groundwater, Method B, Non Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>. Revised May 2014.

Laboratory Notes:

^fAnalyte was detected in the associated method blank. Analyte concentration in the sample is greater than ten times the concentration found in the method blank.

^fEstimated concentration.

^{ve}Estimated concentration calculated for an analyte response above valid instrument calibration range; a dilution is required to obtain accurate quantification of the analyte.

^xThe sample chromatographic pattern does not resemble the fuel standard used for quantitation.

^{xv}The GRPH result in the sample is due to a pattern of peaks that is consistent with the chlorinated volatiles detected by the 8260C analysis.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

DOF = Dalton, Olmsted & Fuglevand, Inc.

DRPH = diesel-range petroleum hydrocarbons

dup = duplicate

EPA = U.S. Environmental Protection Agency

EPJ = E.P. Johnson Construction Inc., and Environmental

GRPH = gasoline-range petroleum hydrocarbons

HCID = hydrocarbon identification

MTCA = Washington State Model Toxics Control Act

NWTPH = northwest total petroleum hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

Retec = Remediation Technologies, Inc.

Roux = Roux Associates

ROW = right-of-way

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

Urban = Urban Redevelopment

WAC = Washington Administrative Code

Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
R-MW1	Unknown	10/22/92	Roux	Unknown	5	32.8	NA	NA	NA	NA	NA	NA	NA	5.8	0.35	NA	<0.005	<0.010	NA	NA	NA
R-MW4	Unknown	10/22/92	Roux	Unknown	5	47.0	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.010	NA	NA	NA
	Unknown	10/22/92	Roux	Unknown	15	37.0	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.010	NA	NA	NA
	Unknown	10/22/92	Roux	Unknown	30	22.0	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.010	NA	NA	NA
R-MW6	Unknown	10/27/92	Roux	Unknown	6	39.5	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.010	NA	NA	NA
	Unknown	10/27/92	Roux	Unknown	11	34.5	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.010	NA	NA	NA
	Unknown	10/27/92	Roux	Unknown	16	29.5	NA	NA	NA	NA	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.010	NA	NA	NA
B-1	B-1-13	06/23/00	ThermoRetec	ARI	13	31.0	--	--	--	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	0.0021	<0.0012	<0.0012	<0.0012	<0.0035	<0.0059
B-2	B-2-6.5	06/23/00	ThermoRetec	ARI	6.5	35.5	--	--	--	<0.0011	<0.0011	<0.0011	<0.0022	0.017	0.0020	0.011	<0.0011	<0.0011	<0.0011	<0.0033	<0.0055
	B-2-11	06/23/00	ThermoRetec	ARI	11	31.0	--	--	--	<0.0012	<0.0012	<0.0012	<0.0024	0.92	0.085	0.64	0.0037	<0.0012	<0.0012	<0.0037	<0.0061
	B-2-16	06/23/00	ThermoRetec	ARI	16	26.0	--	--	--	<0.0011	<0.0011	<0.0011	<0.0022	0.049	0.0011	0.0075	<0.0011	<0.0011	<0.0011	<0.0032	<0.0054
B-3	B-3-12	06/23/00	ThermoRetec	ARI	12	31.5	--	--	--	<0.0013	<0.0013	<0.0013	<0.0026	<0.0013	<0.0013	0.0016	<0.0013	<0.0013	<0.0013	<0.0039	<0.0064
B-5	B-5-10	06/23/00	ThermoRetec	ARI	10	32.0	--	--	--	<0.0011	<0.0011	<0.0011	<0.0022	0.0051	<0.0011	0.0021	<0.0011	<0.0011	<0.0011	<0.0032	<0.0053
	B-5-11.5	06/23/00	ThermoRetec	ARI	11.5	30.5	--	--	--	<0.0012	<0.0012	<0.0012	<0.0024	0.12	0.0088	0.013	<0.0012	<0.0012	<0.0012	<0.0036	<0.0061
B-6	B-6-6	06/24/00	ThermoRetec	ARI	6	36.0	NA	NA	NA	NA	NA	NA	NA	0.0085	0.0014	0.0021	<0.0012	<0.0012	NA	NA	NA
	B-6-12	06/24/00	ThermoRetec	ARI	12	30.0	NA	NA	NA	NA	NA	NA	NA	0.0067	0.0026	0.0047	<0.0012	<0.0012	NA	NA	NA
	B-6-18	06/24/00	ThermoRetec	ARI	18	24.0	NA	NA	NA	NA	NA	NA	NA	2.3	0.0078	0.0031	<0.0013	<0.0013	NA	NA	NA
B-7	B-7-6	06/24/00	ThermoRetec	ARI	6	36.0	NA	NA	NA	NA	NA	NA	NA	0.031	0.0029	0.0052	<0.0012	<0.0012	NA	NA	NA
B-8	B-8-4	06/24/00	ThermoRetec	ARI	4	38.0	NA	NA	NA	NA	NA	NA	NA	0.092	0.0006	0.0019	<0.0011	<0.0011	NA	NA	NA
	B-8-8	06/24/00	ThermoRetec	ARI	8	34.0	NA	NA	NA	NA	NA	NA	NA	1.4	0.017	0.021	<0.0011	<0.0011	NA	NA	NA
B-9	B-9-4	06/24/00	ThermoRetec	ARI	4	38.0	NA	NA	NA	NA	NA	NA	NA	170	<1.6	<1.6	<1.6	<1.6	NA	NA	NA
	B-9-8	06/24/00	ThermoRetec	ARI	8	34.0	NA	NA	NA	NA	NA	NA	NA	4.8	0.13	0.21	0.0022	<0.0012	NA	NA	NA
B-10	B-10-12	06/24/00	ThermoRetec	ARI	12	46.0	NA	NA	NA	NA	NA	NA	NA	0.017	0.0014	0.0061	<0.0011	<0.0011	NA	NA	NA
G-MW1	MW 1-3-8	07/20/01	GeoEngineers	NCA	8	31.0	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	19.9	<0.0230	<0.0260	<0.0130	<0.0130	<0.0140	0.0634 ^B	<0.0140
	MW 1-8-20	07/20/01	GeoEngineers	NCA	20	19.0	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	237	0.0622	<0.0260	<0.0130	<0.0130	<0.0140	0.0671 ^B	0.0061
	MW 1-11-27.5	07/20/01	GeoEngineers	NCA	27.5	11.5	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	16.4	0.0706 ^J	<0.0260	<0.0130	<0.0130	<0.0140	0.0612 ^B	<0.0140
	MW 1-13-32.5	07/20/01	GeoEngineers	NCA	32.5	6.5	--	--	--	<0.0380	<0.0360	<0.0380	<0.1080	33.1	0.394	<0.0520	<0.0260	<0.0260	<0.0280	0.165 ^B	<0.0280
	MW 1-15-37.5	07/20/01	GeoEngineers	NCA	37.5	1.5	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	0.678	<0.0230	<0.0260	<0.0130	<0.0130	<0.0140	0.0484 ^{B,J}	<0.0140
G-SB4 (G-MW3)	SB4-4-10	07/20/01	GeoEngineers	NCA	10	29.6	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	5.28	<0.0230	<0.0260	<0.0130	<0.0130	<0.0140	0.0793 ^B	<0.0140
	SB4-7-17.5	07/20/01	GeoEngineers	NCA	17.5	22.1	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	13.2	<0.0230	<0.0260	<0.0130	<0.0130	<0.0140	0.0818 ^B	<0.0140
	SB4-13-32.5	07/20/01	GeoEngineers	NCA	32.5	7.1	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	5.70	0.175	<0.0260	<0.0130	<0.0130	<0.0140	0.253 ^B	<0.0140
	SB4-15-37.5	07/20/01	GeoEngineers	NCA	37.5	2.1	--	--	--	<0.0190	<0.0180	<0.0190	<0.0540	0.581	<0.0230	<0.0260	<0.0130	<0.0130	<0.0140	0.0842 ^B	<0.0140
P-03/W-MW-01	SB-W-03-0160	01/27/12	Windward	ARI	16-16.5	29.1	--	--	--	<0.0010	0.0006 ^J	<0.0010	<0.0020	<0.0010	<0.0010	0.0006 ^J	<0.0010	<0.0010	<0.0010	0.0027 ^B	<0.0048
	SB-W-03-0225	01/27/12	Windward	ARI	22.5-23	22.6	--	--	--	<0.0009	0.0007 ^J	<0.0009	<0.0018	0.03 ^B	0.0018	0.0021	<0.0009	<0.0009	<0.0009	0.0032 ^B	<0.00430
	SB-W-03-0315	01/27/12	Windward	ARI	31.5-32	13.6	--	--	--	<0.21	<0.21	<0.21	<0.42	16 ^B	0.59	0.48	<0.21	<0.21	<0.21	<0.41	<1
	SB-W-03-0450	01/27/12	Windward	ARI	45-45.5	-0.4	--	--	--	<0.0007	0.0006 ^J	<0.0007	<0.0014	0.38 ^B	0.022	0.041	0.0005 ^J	<0.0007	<0.0007	0.0025 ^B	<0.0035
	SB-W-03-0550	01/27/12	Windward	ARI	55.5-56	-10.4	--	--	--	<0.045	<0.045	<0.045	<0.09	1.9 ^J	0.17	0.13	<0.045	<0.045	<0.045	<0.091	<0.23
	SB-W-03-0645	01/27/12	Windward	ARI	64.5-65	-19.4	--	--	--	<0.0008	<0.0008	<0.0008	<0.0016	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	0.0098 ^B	<0.0041
SB-W-03-0730	01/27/12	Windward	ARI	73-73.5	-27.9	--	--	--	<0.0007	0.0006 ^J	<0.0007	<0.0014	0.1 ^B	0.0081	0.025	<0.0007	<0.0007	<0.0007	0.0020 ^B	<0.0036	
P-06/W-MW-02	SB-W-06-0900	01/29/12	Windward	ARI	9-9.5	34.5	--	--	--	0.0009 ^J	<0.0013	<0.0013	<0.0026	0.058 ^T	0.0081	<0.0013	<0.0013	<0.0013	<0.0013	<0.0027	<0.0067
	SB-W-06-0185	01/29/12	Windward	ARI	18.5-19	25.0	--	--	--	0.0008 ^J	0.0006 ^J	<0.0009	<0.0018	<0.0009 ^T	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	0.0024 ^B	<0.0043
	SB-W-06-0305	01/30/12	Windward	ARI	30.5-31	13.0	--	--	--	<0.27	<0.27	<0.27	<0.34	18	0.41	0.4	<0.27	<0.27	<0.27	<0.53	<1.3
	SB-W-06-0380	01/30/12	Windward	ARI	38-38.5	5.5	--	--	--	<0.046	<0.046	<0.046	<0.092	0.14	0.057	0.52	<0.046	<0.046	<0.046	<0.092	<0.23
	SB-W-06-0405	01/30/12	Windward	ARI	40.5-41	3.0	--	--	--	<0.036	<0.036	<0.036	<0.072	5.2	0.2	0.15	<0.036	<0.036	<0.036	<0.072	<0.18
	SB-W-06-0485	01/30/12	Windward	ARI	48.5-49	-5.0	--	--	--	<0.0008	<0.0008	<0.0008	<0.0016	0.033	0.0007 ^J	0.0009	<0.0008	<0.0008	<0.0008	0.0018 ^B	<0.0040
	SB-W-06-9485	01/30/12	Windward	ARI	48.5-49 (DUP)	-5.0	--	--	--	<0.0009	<0.0009	<0.0009	<0.0018	0.052	0.0011	0.0010	<0.0009	<0.0009	<0.0009	0.0019 ^B	<0.0046
	SB-W-06-0590	01/30/12	Windward	ARI	59-59.5	-16.0	--	--	--	<0.043	<0.043	<0.043	<0.086	0.53	0.037 ^J	<0.043	<0.043	<0.043	<0.043	<0.086	<0.21
SB-W-06-0715	01/30/12	Windward	ARI	71.5-72	-28.0	--	--	--	<0.0008	<0.0008	<0.0008	<0.0016	0.0009	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0017	<0.0042	
SB-W-06-0790	01/31/12	Windward	ARI	79-79.5	-35.5	--	--	--	<0.0009	<0.0009	<0.0009	<0.0018	0.0022	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0017	<0.0043	
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160					



Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)															
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾	
P-07/W-MW-03	SB-W-07-0135	01/26/12	Windward	ARI	13.5-14	25.8	--	--	--	0.0007 ^J	0.0024	<0.0009	0.0008 ^J	0.0038	0.0005 ^J	0.0008 ^J	<0.0009	<0.0009	<0.0009	0.0032 ^B	<0.0045	
	SB-W-07-0275	01/26/12	Windward	ARI	27.5-28	11.8	--	--	--	0.0005 ^J	0.0013	<0.0009	<0.0018	0.12	0.0053	0.083	0.0013	<0.0009	<0.0009	0.0041 ^B	<0.0046	
	SB-W-07-0335	01/26/12	Windward	ARI	33.5-34	5.8	--	--	--	<0.0008	0.0012	<0.0008	0.0004 ^J	18 ^B	0.05	0.011	<0.0008	<0.0008	0.0004 ^J	0.0036 ^B	<0.0038	
	SB-W-07-0430	01/26/12	Windward	ARI	43-43.5	-3.7	--	--	--	<0.0008	0.0009	<0.0008	<0.0016	46 ^B	0.7	0.091	<0.0009	<0.0008	0.0030	0.0036 ^B	<0.0041	
	SB-W-07-0530	01/26/12	Windward	ARI	53-53.5	-13.7	--	--	--	<0.0008	0.0012	<0.0008	<0.0016	18 ^B	1.1	0.63	0.0009	<0.0008	0.0071	0.0027 ^B	<0.0039	
	SB-W-07-0630	01/26/12	Windward	ARI	63-63.5	-23.7	--	--	--	<0.0010	0.0007 ^J	<0.0010	<0.0020	0.0012 ^B	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0025 ^B	<0.0050	
SB-W-07-0780	01/26/12	Windward	ARI	78-78.5	-38.7	--	--	--	<0.0008	0.0004 ^J	<0.00080	<0.0016	0.0023 ^B	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	0.0024 ^B	<0.0039		
P-08/W-MW-04 ⁽¹⁰⁾	SB-W-08-0090	01/28/12	Windward	ARI	9-9.5	26.62	--	--	--	<0.27	<0.27	<0.27	<0.54	9.5 ^T	2.3	7.3	0.22 ^J	0.71	<0.27	<0.27	<1.3	
	SB-W-08-0155	01/28/12	Windward	ARI	15.5-16	20.12	--	--	--	<0.0009	0.0006 ^J	<0.0009	<0.0018	0.38 ^T	0.11	0.12	0.0039	0.12	0.0007	0.003 ^B	<0.0043	
	SB-W-08-0265	01/28/12	Windward	ARI	26.5-27	9.12	--	--	--	<0.0009	0.0006 ^J	<0.0009	<0.0019	0.37 ^T	0.0052	0.0043	<0.0009	<0.0009	<0.0009	0.0033 ^B	<0.0043	
	SB-W-08-0380	01/28/12	Windward	ARI	38-38.5	-2.38	--	--	--	<0.0008	<0.0008	<0.0008	<0.0016	0.48 ^T	0.0019	0.0012	<0.0008	<0.0008	<0.0008	0.0038 ^B	<0.0042	
	SB-W-08-0480	01/28/12	Windward	ARI	48-48.5	-12.38	--	--	--	0.0005 ^J	0.0013	<0.0009	<0.0018	0.025 ^T	0.0007 ^J	0.0009 ^J	<0.0009	<0.0009	<0.0009	0.0082 ^B	<0.0046	
	SB-W-08-9480	01/28/12	Windward	ARI	48-48.5 (DUP)	-12.38	--	--	--	0.0004 ^J	0.0008 ^J	<0.0009	<0.0018	0.016 ^T	<0.0009	0.0005 ^J	<0.0009	<0.0009	<0.0009	0.0033 ^B	<0.0043	
	SB-W-08-0590	01/28/12	Windward	ARI	59-59.5	-23.38	--	--	--	<0.13	<0.13	<0.13	<0.26	10 ^T	0.081 ^J	<0.13	<0.13	<0.13	<0.13	<0.13	<0.64	
SB-W-08-0710	01/29/12	Windward	ARI	71-71.5	-35.38	--	--	--	<0.2	<0.2	<0.2	<0.4	9.4 ^T	0.33	<0.2	<0.2	<0.2	<0.2	<0.2	<0.99		
SB-W-08-0760	01/29/12	Windward	ARI	76-76.5	-40.38	--	--	--	<0.0009	<0.0009	<0.0009	<0.0018	0.017 ^T	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	0.0019 ^B	<0.0047		
B101/MW101	B101-30	07/10/12	SoundEarth	F&BI	30	9.8	--	--	--	--	--	--	--	24	0.12	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-34	07/10/12	SoundEarth	F&BI	34	5.8	--	--	--	--	--	--	--	8.4	0.033	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-40	07/10/12	SoundEarth	F&BI	40	-0.2	--	--	--	--	--	--	--	20	0.28	0.064	<0.05	<0.05	<0.05	<0.5	--	
	B101-47	07/10/12	SoundEarth	F&BI	47	-7.2	--	--	--	--	--	--	--	7.2	0.20	0.12	<0.05	<0.05	<0.05	<0.5	--	
	B101-48	07/10/12	SoundEarth	F&BI	48	-8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B101-55	07/10/12	SoundEarth	F&BI	55	-15.2	--	--	--	--	--	--	--	4.2	0.084	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-65	07/10/12	SoundEarth	F&BI	65	-25.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-75	07/11/12	SoundEarth	F&BI	75	-35.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-81	07/11/12	SoundEarth	F&BI	81	-41.2	--	--	--	--	--	--	--	0.31	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-92	07/12/12	SoundEarth	F&BI	92	-52.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-97	07/12/12	SoundEarth	F&BI	97	-57.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-104	07/12/12	SoundEarth	F&BI	104	-64.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B101-114.5	07/12/12	SoundEarth	F&BI	114.5	-74.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B101-120	07/12/12	SoundEarth	F&BI	120	-80.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--		
B101-131	07/12/12	SoundEarth	F&BI	131	-91.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--		
B101-140	07/12/12	SoundEarth	F&BI	140	-100.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--		
B102/MW102	B102-20	07/17/12	SoundEarth	F&BI	20	29.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B102-30	07/17/12	SoundEarth	F&BI	30	19.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B102-38	07/17/12	SoundEarth	F&BI	38	11.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	B102-40	07/17/12	SoundEarth	F&BI	40	9.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	B102-49	07/17/12	SoundEarth	F&BI	49	0.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B102-60	07/17/12	SoundEarth	F&BI	60	-10.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B102-70	07/18/12	SoundEarth	F&BI	70	-20.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B102-80	07/19/12	SoundEarth	F&BI	80	-30.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B102-90	07/19/12	SoundEarth	F&BI	90	-40.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B102-100	07/20/12	SoundEarth	F&BI	100	-50.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
B102-110	07/20/12	SoundEarth	F&BI	110	-60.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B102-120	07/23/12	SoundEarth	F&BI	120	-70.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160 ⁽⁸⁾	1,600 ⁽⁸⁾	0.67 ⁽⁹⁾	4,000 ⁽⁸⁾	0.02 ⁽⁷⁾	5 ⁽⁷⁾	



Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
B103/MW103	B103-10	07/25/12	SoundEarth	F&BI	10	29.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B103-18	07/25/12	SoundEarth	F&BI	18	21.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B103-30	07/25/12	SoundEarth	F&BI	30	9.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B103-40	07/25/12	SoundEarth	F&BI	40	-0.2	--	--	--	--	--	--	--	4.6	0.77	0.12	<0.05	<0.05	<0.05	<0.5	--
	B103-45	07/25/12	SoundEarth	F&BI	45	-5.2	--	--	--	--	--	--	--	5.3	0.48	0.24	<0.05	<0.05	<0.05	<0.5	--
	B103-55	07/25/12	SoundEarth	F&BI	55	-15.2	--	--	--	--	--	--	--	<0.025	<0.03	0.18	<0.05	<0.05	<0.05	<0.5	--
	B103-62.5	07/26/12	SoundEarth	F&BI	62.5	-22.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B103-75	07/26/12	SoundEarth	F&BI	75	-35.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B103-83	07/26/12	SoundEarth	F&BI	83	-43.2	--	--	--	--	--	--	--	<0.025	<0.03	0.12	<0.05	<0.05	<0.05	<0.5	--
	B103-95	07/26/12	SoundEarth	F&BI	95	-55.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B103-105	07/27/12	SoundEarth	F&BI	105	-65.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B103-113	07/27/12	SoundEarth	F&BI	113	-73.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B104/MW104	B104-10	07/30/12	SoundEarth	F&BI	10	33.1	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B104-20	07/30/12	SoundEarth	F&BI	20	23.1	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B104-30	07/30/12	SoundEarth	F&BI	30	13.1	--	--	--	--	--	--	--	1.8	0.086	0.14	<0.05	<0.05	<0.05	<0.5	--
	B104-35	07/30/12	SoundEarth	F&BI	35	8.1	--	--	--	--	--	--	--	7.1	0.23	0.099	<0.05	<0.05	<0.05	<0.5	--
	B104-50	07/30/12	SoundEarth	F&BI	50	-7.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B104-60	07/31/12	SoundEarth	F&BI	60	-17.0	--	--	--	--	--	--	--	2.1	0.21	0.12	<0.05	<0.05	<0.05	<0.5	--
	B104-69	07/31/12	SoundEarth	F&BI	69	-26.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B104-80	07/31/12	SoundEarth	F&BI	80	-37.0	--	--	--	--	--	--	--	0.12	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B104-90	08/01/12	SoundEarth	F&BI	90	-47.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B104-100	08/01/12	SoundEarth	F&BI	100	-57.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B104-110	08/01/12	SoundEarth	F&BI	110	-67.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B104-120	08/01/12	SoundEarth	F&BI	120	-77.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B104-130	08/01/12	SoundEarth	F&BI	130	-87.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B105/MW105	B105-10	08/06/12	SoundEarth	F&BI	10	35.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-20	08/06/12	SoundEarth	F&BI	20	25.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-30	08/06/12	SoundEarth	F&BI	30	15.0	--	--	--	--	--	--	--	1.3	0.16	0.086	<0.05	<0.05	<0.05	<0.5	--
	B105-40	08/08/12	SoundEarth	F&BI	40	5.0	--	--	--	--	--	--	--	<0.025	<0.03	0.22	<0.05	<0.05	<0.05	<0.5	--
	B105-50	08/08/12	SoundEarth	F&BI	50	-5.0	--	--	--	--	--	--	--	0.18	0.040	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-60	08/09/12	SoundEarth	F&BI	60	-15.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-70	08/09/12	SoundEarth	F&BI	70	-25.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-80	08/09/12	SoundEarth	F&BI	80	-35.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-90	08/10/12	SoundEarth	F&BI	90	-45.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B105-100	08/10/12	SoundEarth	F&BI	100	-55.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B105-110	08/10/12	SoundEarth	F&BI	110	-65.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B105-120	08/10/12	SoundEarth	F&BI	120	-75.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B105-130	08/10/12	SoundEarth	F&BI	130	-85.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B105-138	08/10/12	SoundEarth	F&BI	138	-93.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B106/MW106	B106-10	08/14/12	SoundEarth	F&BI	10	42.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-20	08/14/12	SoundEarth	F&BI	20	32.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-30	08/14/12	SoundEarth	F&BI	30	22.4	--	--	--	--	--	--	--	0.038	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-40	08/14/12	SoundEarth	F&BI	40	12.4	--	--	--	--	--	--	--	3.1	0.15	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-50	08/14/12	SoundEarth	F&BI	50	2.4	--	--	--	--	--	--	--	0.73	0.17	0.11	<0.05	<0.05	<0.05	<0.5	--
	B106-60	08/14/12	SoundEarth	F&BI	60	-7.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-70	08/15/12	SoundEarth	F&BI	70	-17.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-80	08/15/12	SoundEarth	F&BI	80	-27.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-90	08/15/12	SoundEarth	F&BI	90	-37.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B106-100	08/15/12	SoundEarth	F&BI	100	-47.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B106-110	08/15/12	SoundEarth	F&BI	110	-57.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B106-120	08/15/12	SoundEarth	F&BI	120	-67.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B106-130	08/15/12	SoundEarth	F&BI	130	-77.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
B106-140	08/15/12	SoundEarth	F&BI	140	-87.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160 ⁽⁸⁾	1,600 ⁽⁸⁾	0.67 ⁽⁹⁾	4,000 ⁽⁸⁾	0.02 ⁽⁷⁾	5 ⁽⁷⁾



Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
B107/MW107	B107-05	12/03/12	SoundEarth	F&BI	5	39.2	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B107-15	12/03/12	SoundEarth	F&BI	15	29.2	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B107-25	12/03/12	SoundEarth	F&BI	25	19.2	<2	--	--	<0.03	<0.05	<0.05	<0.15	0.60	0.063	0.060	<0.05	<0.05	<0.05	<0.5	--
	B107-35	12/03/12	SoundEarth	F&BI	35	9.2	<2	--	--	<0.03	<0.05	<0.05	<0.15	19	0.59	0.37	<0.05	<0.05	<0.05	<0.5	--
	B107-45	12/03/12	SoundEarth	F&BI	45	-0.8	<2	--	--	<0.03	<0.05	<0.05	<0.15	0.028	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B108/MW108	B108-15	12/14/12	SoundEarth	F&BI	15	18.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B108-25	12/14/12	SoundEarth	F&BI	25	8.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B108-35	12/14/12	SoundEarth	F&BI	35	-1.9	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B108-45	12/14/12	SoundEarth	F&BI	45	-11.9	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B108-50	12/14/12	SoundEarth	F&BI	50	-16.9	--	--	--	--	--	--	--	0.037	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B109/MW109	B109-05	12/04/12	SoundEarth	F&BI	5	30.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B109-15	12/04/12	SoundEarth	F&BI	15	20.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B109-25	12/04/12	SoundEarth	F&BI	25	10.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B109-35	12/04/12	SoundEarth	F&BI	35	0.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B109-45	12/04/12	SoundEarth	F&BI	45	-9.3	--	--	--	--	--	--	--	1.6	0.94	0.15	<0.05	<0.05	<0.05	<0.5	--
B110/MW110	B110-15	12/04/12	SoundEarth	F&BI	15	25.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B110-25	12/04/12	SoundEarth	F&BI	25	15.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B110-35	12/04/12	SoundEarth	F&BI	35	5.0	--	--	--	--	--	--	--	3.4	0.21	0.31	<0.05	<0.05	<0.05	<0.5	--
	B110-45	12/04/12	SoundEarth	F&BI	45	-5.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B111/MW111	B111-10	12/05/12	SoundEarth	F&BI	10	26.8	--	--	--	--	--	--	--	<0.05	<0.06	<0.1	<0.1	<0.1	<0.1	<1	--
	B111-20	12/05/12	SoundEarth	F&BI	20	16.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B111-30	12/05/12	SoundEarth	F&BI	30	6.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B111-38	12/05/12	SoundEarth	F&BI	38	-1.2	--	--	--	--	--	--	--	0.078	0.40	0.28	<0.05	<0.05	<0.05	<0.5	--
	B111-50	12/05/12	SoundEarth	F&BI	50	-13.2	--	--	--	--	--	--	--	1.4	0.56	0.11	<0.05	<0.05	<0.05	<0.5	--
	B111-60	12/06/12	SoundEarth	F&BI	60	-23.2	--	--	--	--	--	--	--	0.085	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B111-70	12/06/12	SoundEarth	F&BI	70	-33.2	--	--	--	--	--	--	--	0.033	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B112/MW112	B112-10	12/06/12	SoundEarth	F&BI	80	-43.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-10	12/11/12	SoundEarth	F&BI	10	47.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-20	12/11/12	SoundEarth	F&BI	20	37.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-30	12/11/12	SoundEarth	F&BI	30	27.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-40	12/11/12	SoundEarth	F&BI	40	17.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-50	12/11/12	SoundEarth	F&BI	50	7.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-60	12/11/12	SoundEarth	F&BI	60	-2.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B113/MW113	B112-75	12/11/12	SoundEarth	F&BI	75	-17.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B112-85	12/12/12	SoundEarth	F&BI	85	-27.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B113-10	12/18/12	SoundEarth	F&BI	10	23.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B113-20	12/18/12	SoundEarth	F&BI	20	13.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B113-30	12/18/12	SoundEarth	F&BI	30	3.2	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B114/MW114	B113-40	12/18/12	SoundEarth	F&BI	40	-6.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B113-50	12/18/12	SoundEarth	F&BI	50	-16.8	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B114-15	12/10/12	SoundEarth	F&BI	15	31.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B114-25	12/10/12	SoundEarth	F&BI	25	21.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B114-35	12/10/12	SoundEarth	F&BI	35	11.4	--	--	--	--	--	--	--	8.8	0.45	0.11	<0.05	<0.05	<0.05	<0.5	--
B114/MW114	B114-40	12/10/12	SoundEarth	F&BI	40	6.4	--	--	--	--	--	--	--	0.59	0.071	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B114-45	12/10/12	SoundEarth	F&BI	45	1.4	--	--	--	--	--	--	--	0.25	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160 ⁽⁸⁾	1,600 ⁽⁸⁾	0.67 ⁽⁹⁾	4,000 ⁽⁸⁾	0.02 ⁽⁷⁾	5 ⁽⁷⁾



Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
B115/MW115	B115-10	12/13/12	SoundEarth	F&BI	10	24.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B115-15	12/13/12	SoundEarth	F&BI	15	19.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B115-25	12/13/12	SoundEarth	F&BI	25	9.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B115-35	12/13/12	SoundEarth	F&BI	35	-0.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B115-45	12/13/12	SoundEarth	F&BI	45	-10.5	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B116/MW116	B116-15	12/07/12	SoundEarth	F&BI	15	17.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B116-25	12/07/12	SoundEarth	F&BI	25	7.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B116-35	12/07/12	SoundEarth	F&BI	35	-3.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B116-45	12/07/12	SoundEarth	F&BI	45	-13.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B117/MW117	B117-10	02/04/13	SoundEarth	F&BI	10	47.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B117-20	02/04/13	SoundEarth	F&BI	20	37.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B117-30	02/04/13	SoundEarth	F&BI	30	27.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B117-40	02/04/13	SoundEarth	F&BI	40	17.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B117-50	02/04/13	SoundEarth	F&BI	50	7.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B118/MW118	B118-10	03/21/13	SoundEarth	F&BI	10	43.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B118-20	03/21/13	SoundEarth	F&BI	20	33.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B118-30	03/21/13	SoundEarth	F&BI	30	23.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B118-40	03/21/13	SoundEarth	F&BI	40	13.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B118-50	03/21/13	SoundEarth	F&BI	50	3.4	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B119/MW119	B119-10	03/21/13	SoundEarth	F&BI	10	27.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B119-20	03/21/13	SoundEarth	F&BI	20	17.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B119-30	03/21/13	SoundEarth	F&BI	30	7.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	B119-40	03/21/13	SoundEarth	F&BI	40	-2.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
B120/MW120	B120-20	12/16/13	SoundEarth	F&BI	20	--	<2	--	--	<0.3	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B120-30	12/16/13	SoundEarth	F&BI	30	--	<2	--	--	<0.3	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B120-45	12/16/13	SoundEarth	F&BI	45	--	<2	--	--	<0.3	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
B121/MW121	B121-15	12/16/13	SoundEarth	F&BI	15	--	<2	--	--	<0.3	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B121-25	12/16/13	SoundEarth	F&BI	25	--	<2	--	--	<0.3	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
B122/MW122	B122-15	12/17/13	SoundEarth	F&BI	15	--	--	--	--	0.053	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	0.13
	B122-25	12/17/13	SoundEarth	F&BI	25	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B122-40	12/17/13	SoundEarth	F&BI	40	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	0.22	<0.05	<0.05	<0.05	<0.5	<0.05
	B122-45	12/17/13	SoundEarth	F&BI	45	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B122-50	12/17/13	SoundEarth	F&BI	50	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B122-60	12/17/13	SoundEarth	F&BI	60	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B122-70	12/17/13	SoundEarth	F&BI	70	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B122-80	12/17/13	SoundEarth	F&BI	80	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
B122-100	12/17/13	SoundEarth	F&BI	100	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
B123/MW123	B123-20	12/18/13	SoundEarth	F&BI	20	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
B124/MW124	B124-10	12/19/13	SoundEarth	F&BI	10	--	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B124-20	12/19/13	SoundEarth	F&BI	20	--	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-30	12/19/13	SoundEarth	F&BI	30	--	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-40	12/19/13	SoundEarth	F&BI	40	--	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-50	12/19/13	SoundEarth	F&BI	50	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-60	12/19/13	SoundEarth	F&BI	60	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-70	12/19/13	SoundEarth	F&BI	70	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-80	12/19/13	SoundEarth	F&BI	80	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-90	12/19/13	SoundEarth	F&BI	90	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B124-100	12/19/13	SoundEarth	F&BI	100	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
B124-110	12/19/13	SoundEarth	F&BI	110	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
B124-120	12/19/13	SoundEarth	F&BI	120	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160 ⁽⁸⁾	1,600 ⁽⁸⁾	0.67 ⁽⁹⁾	4,000 ⁽⁸⁾	0.02 ⁽⁷⁾	5 ⁽⁷⁾



Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)																
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾		
B125/MW125	B125-15	12/20/13	SoundEarth	F&BI	15	--	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05		
	B125-20	12/20/13	SoundEarth	F&BI	20	--	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	0.52 ^{lc}	<0.05	
	B125-25	12/20/13	SoundEarth	F&BI	25	--	<2	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	0.98 ^{lc}	<0.05	
	B125-30	12/20/13	SoundEarth	F&BI	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B126/MW126	B126-20	12/30/13	SoundEarth	F&BI	20	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	0.082	
	B126-35	12/30/13	SoundEarth	F&BI	35	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B126-45	12/30/13	SoundEarth	F&BI	45	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B126-55	12/30/13	SoundEarth	F&BI	55	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B126-60	12/31/13	SoundEarth	F&BI	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	B126-65	01/01/14	SoundEarth	F&BI	65	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05
	B126-75	01/02/14	SoundEarth	F&BI	75	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B126-80	01/03/14	SoundEarth	F&BI	80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B127/MW127	B127-15	12/31/13	SoundEarth	F&BI	15	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B127-25	12/31/13	SoundEarth	F&BI	25	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B127-40	12/31/13	SoundEarth	F&BI	40	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B127-45	12/31/14	SoundEarth	F&BI	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B128/MW128	B128-25	01/09/14	SoundEarth	F&BI	25	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B128-45	01/09/14	SoundEarth	F&BI	45	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
	B128-65	01/09/14	SoundEarth	F&BI	65	--	--	--	--	<0.03	<0.05	<0.05	<0.15	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	
DB01	DB01-10	03/18/13	SoundEarth	F&BI	10	32.3	--	--	--	--	--	--	--	0.042	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB01-20	03/18/13	SoundEarth	F&BI	20	22.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB01-30	03/18/13	SoundEarth	F&BI	30	12.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB01-40	03/18/13	SoundEarth	F&BI	40	2.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
DB02	DB02-10	03/18/13	SoundEarth	F&BI	10	30.9	<2	<50	<250	<0.02	<0.02	<0.02	<0.06	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB02-15	03/18/13	SoundEarth	F&BI	15	25.9	<2	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	<0.5	--	
	DB02-20	03/18/13	SoundEarth	F&BI	20	20.9	--	--	--	--	--	--	--	0.22	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB02-30	03/18/13	SoundEarth	F&BI	30	10.9	--	--	--	--	--	--	--	0.058	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB02-40	03/18/13	SoundEarth	F&BI	40	0.9	--	--	--	--	--	--	--	2.0	0.060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
DB03	DB03-05	03/27/13	SoundEarth	F&BI	5	35.9	--	--	--	--	--	--	--	0.061	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<1	--	
	DB03-20	03/27/13	SoundEarth	F&BI	20	20.9	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB03-35	03/27/13	SoundEarth	F&BI	35	5.9	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB03-45	03/27/13	SoundEarth	F&BI	45	-4.1	--	--	--	--	--	--	--	2.7	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB03-55	03/27/13	SoundEarth	F&BI	55	-14.1	--	--	--	--	--	--	--	3.6	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB03-60	03/27/13	SoundEarth	F&BI	60	-19.1	--	--	--	--	--	--	--	3.4	0.23	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB04	DB04-10	03/21/13	SoundEarth	F&BI	10	33.2	--	--	--	--	--	--	--	0.17	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB04-20	03/21/13	SoundEarth	F&BI	20	23.2	--	--	--	--	--	--	--	4.5	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB04-35	03/21/13	SoundEarth	F&BI	35	8.2	--	--	--	--	--	--	--	8.0	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB04-45	03/21/13	SoundEarth	F&BI	45	-1.9	--	--	--	--	--	--	--	0.28	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB04-50	03/22/13	SoundEarth	F&BI	50	-6.9	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB04-60	03/22/13	SoundEarth	F&BI	60	-16.9	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB05	DB05-10	03/26/13	SoundEarth	F&BI	10	36.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB05-20	03/26/13	SoundEarth	F&BI	20	26.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB05-30	03/26/13	SoundEarth	F&BI	30	16.3	--	--	--	--	--	--	--	3.2	0.040	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--	
	DB05-40	03/26/13	SoundEarth	F&BI	40	6.3	--	--	--	--	--	--	--	14	0.085	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB05-50	03/26/13	SoundEarth	F&BI	50	-3.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB05-60	03/26/13	SoundEarth	F&BI	60	-13.7	--	--	--	--	--	--	--	0.34	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	--
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160 ⁽⁸⁾	1,600 ⁽⁸⁾	0.67 ⁽⁹⁾	4,000 ⁽⁸⁾	0.02 ⁽⁷⁾	5 ⁽⁷⁾		



Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
DB06	DB06-10	03/25/13	SoundEarth	F&BI	10	33.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB06-25	03/25/13	SoundEarth	F&BI	25	18.7	--	--	--	--	--	--	--	0.98	0.033	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB06-35	03/25/13	SoundEarth	F&BI	35	8.7	--	--	--	--	--	--	--	30	0.26	0.096	<0.05	<0.05	<0.05	<0.5	--
	DB06-45	03/25/13	SoundEarth	F&BI	45	-1.3	--	--	--	--	--	--	--	1.3	0.036	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB06-55	03/25/13	SoundEarth	F&BI	55	-11.3	--	--	--	--	--	--	--	0.027	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB06-65	03/25/13	SoundEarth	F&BI	65	-21.3	--	--	--	--	--	--	--	0.029	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB06-75	03/25/13	SoundEarth	F&BI	75	-31.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
DB07	DB07-05	03/27/13	SoundEarth	F&BI	5	36.9	--	--	--	--	--	--	--	2.7	0.084	0.076	<0.05	<0.05	<0.05	<0.5	--
	DB07-15	03/27/13	SoundEarth	F&BI	15	26.9	--	--	--	--	--	--	--	7.1	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB07-25	03/27/13	SoundEarth	F&BI	25	16.9	--	--	--	--	--	--	--	9.8	0.067	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB07-35	03/28/13	SoundEarth	F&BI	35	6.9	--	--	--	--	--	--	--	16	0.088	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB07-45	03/28/13	SoundEarth	F&BI	45	-3.1	--	--	--	--	--	--	--	13	0.72	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB07-50	03/28/13	SoundEarth	F&BI	50	-8.1	--	--	--	--	--	--	--	7.3	0.19	0.16	<0.05	<0.05	<0.05	<0.5	--
DB07-60	03/28/13	SoundEarth	F&BI	60	-18.1	--	--	--	--	--	--	--	1.5	0.92	0.53	<0.05	<0.05	<0.05	<0.5	--	
DB07-70	03/28/13	SoundEarth	F&BI	70	-28.1	--	--	--	--	--	--	--	5.0	0.96	0.41	<0.05	<0.05	<0.05	<0.5	--	
DB08	DB08-10	03/20/13	SoundEarth	F&BI	10	32.8	--	--	--	--	--	--	--	0.048	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB08-20	03/20/13	SoundEarth	F&BI	20	22.8	--	--	--	--	--	--	--	4.0	0.19	0.097	<0.05	<0.05	<0.05	<0.5	--
	DB08-35	03/20/13	SoundEarth	F&BI	35	7.8	--	--	--	--	--	--	--	4.5	0.21	0.94	<0.05	<0.05	<0.05	<0.5	--
	DB08-45	03/20/13	SoundEarth	F&BI	45	-2.2	--	--	--	--	--	--	--	0.056	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB08-50	03/21/13	SoundEarth	F&BI	50	-7.2	--	--	--	--	--	--	--	4.2	0.25	0.070	<0.05	<0.05	<0.05	<0.5	--
	DB08-60	03/21/13	SoundEarth	F&BI	60	-17.2	--	--	--	--	--	--	--	0.51	0.20	0.080	<0.05	<0.05	<0.05	<0.5	--
DB08-70	03/21/13	SoundEarth	F&BI	70	-27.2	--	--	--	--	--	--	--	0.41	0.040	<0.05	<0.05	<0.05	<0.05	<0.5	--	
DB09	DB09-10	03/19/13	SoundEarth	F&BI	10	33.3	--	--	--	--	--	--	--	0.027	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB09-20	03/19/13	SoundEarth	F&BI	20	23.3	--	--	--	--	--	--	--	0.15	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB09-30	03/19/13	SoundEarth	F&BI	30	13.3	--	--	--	--	--	--	--	6.1	0.22	0.25	<0.05	<0.05	<0.05	<0.5	--
	DB09-40	03/19/13	SoundEarth	F&BI	40	3.3	--	--	--	--	--	--	--	1.3	0.28	0.18	<0.05	<0.05	<0.05	<0.5	--
	DB09-50	03/19/13	SoundEarth	F&BI	50	-6.7	--	--	--	--	--	--	--	0.14	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB09-60	03/19/13	SoundEarth	F&BI	60	-16.7	--	--	--	--	--	--	--	0.031	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB09-70	03/19/13	SoundEarth	F&BI	70	-26.7	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--	
DB10	DB10-10	03/29/13	SoundEarth	F&BI	10	34.4	--	--	--	--	--	--	--	0.34	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB10-20	03/29/13	SoundEarth	F&BI	20	24.4	--	--	--	--	--	--	--	23	0.11	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB10-35	03/29/13	SoundEarth	F&BI	35	9.4	--	--	--	--	--	--	--	35	0.40	<0.5	<0.5	<0.5	<0.5	<5	--
	DB10-45	03/29/13	SoundEarth	F&BI	45	-0.6	--	--	--	--	--	--	--	57	<0.3	<0.5	<0.5	<0.5	<0.5	<5	--
	DB10-50	04/01/13	SoundEarth	F&BI	50	-5.6	--	--	--	--	--	--	--	52	0.26	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB10-60	04/01/13	SoundEarth	F&BI	60	-15.6	--	--	--	--	--	--	--	2.0	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB10-70	04/01/13	SoundEarth	F&BI	70	-25.6	--	--	--	--	--	--	--	1.8	0.035	<0.05	<0.05	<0.05	<0.05	<0.5	--	
DB11	DB11-15	04/02/13	SoundEarth	F&BI	15	33.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB11-25	04/02/13	SoundEarth	F&BI	25	23.3	--	--	--	--	--	--	--	0.028	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB11-35	04/02/13	SoundEarth	F&BI	35	13.3	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB11-45	04/02/13	SoundEarth	F&BI	45	3.3	--	--	--	--	--	--	--	15	0.12	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB11-55	04/02/13	SoundEarth	F&BI	55	-6.7	--	--	--	--	--	--	--	0.16	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB12	DB12-10	04/03/13	SoundEarth	F&BI	10	31.0	--	--	--	--	--	--	--	0.068	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB12-20	04/03/13	SoundEarth	F&BI	20	21.0	--	--	--	--	--	--	--	18	0.56	1.6	<0.05	<0.05	<0.05	<0.5	--
	DB12-30	04/03/13	SoundEarth	F&BI	30	11.0	--	--	--	--	--	--	--	6.7	0.032	0.052	<0.05	<0.05	<0.05	<0.5	--
	DB12-40	04/03/13	SoundEarth	F&BI	40	1.0	--	--	--	--	--	--	--	11	0.060	<0.05	<0.05	<0.05	<0.05	<0.5	--
DB13	DB13-10	04/03/13	SoundEarth	F&BI	10	32.8	--	--	--	--	--	--	--	0.12	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB13-20	04/03/13	SoundEarth	F&BI	20	22.8	--	--	--	--	--	--	--	0.78	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB13-35	04/03/13	SoundEarth	F&BI	35	7.8	--	--	--	--	--	--	--	2.7	0.24	0.063	<0.05	<0.05	<0.05	<0.5	--
	DB13-45	04/03/13	SoundEarth	F&BI	45	-2.2	--	--	--	--	--	--	--	0.066	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
MTCA Cleanup Level							30⁽⁷⁾	2,000⁽⁷⁾	2,000⁽⁷⁾	0.03⁽⁷⁾	7⁽⁷⁾	6⁽⁷⁾	9⁽⁷⁾	0.05⁽⁷⁾	0.03⁽⁷⁾	160⁽⁸⁾	1,600⁽⁸⁾	0.67⁽⁹⁾	4,000⁽⁸⁾	0.02⁽⁷⁾	5⁽⁷⁾

Table 7
Soil Analytical Results for Petroleum Hydrocarbons and Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
DB14	DB14-10	04/04/13	SoundEarth	F&BI	10	31.0	260	--	--	0.059	0.41	1.2	3.6	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB14-20	04/04/13	SoundEarth	F&BI	20	21.0	73	--	--	<0.02	0.078	0.29	1.0	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB14-30	04/04/13	SoundEarth	F&BI	30	11.0	--	--	--	--	--	--	--	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.5	--
	DB14-40	04/04/13	SoundEarth	F&BI	40	1.0	--	--	--	--	--	--	--	0.050	<0.03	0.077	<0.05	<0.05	<0.05	<0.5	--
BB-5	S-6	09/03/97	B & V	Unknown	15-17	34	<22	<54	<108	ND	ND	ND	ND	--	--	--	--	--	--	--	NA
	S-10	09/03/97	B & V	Unknown	25-27	24	<22	<56	<112	--	--	--	--	--	--	--	--	--	--	--	NA
BB-7	S-4	06/04/97	B & V	Unknown	10-12	17.0	<26	<66	<132	--	--	--	--	--	--	--	--	--	--	--	NA
BB-8	S-8	06/06/97	B & V	Unknown	20-22	23.6	<20	<50	<100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
BB-10	S-6	08/29/97	B & V	Unknown	15-17	42.0	<27	<54	<109	--	--	--	--	--	--	--	--	--	--	--	NA
BB-12	S-3	03/18/98	B & V	Unknown	15-16.5	18.8	<29	<58	<120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	S-14	03/18/98	B & V	Unknown	45-46.5	-11.2	<29	<58	<120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
BB-13	S-10	03/19/98	B & V	Unknown	25-27.5	1.9	<34	<68	<140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	NA
	S-16	03/19/98	B & V	Unknown	40-41.5	-13.1	<30	<61	<120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
BB-14	S-2	03/03/98	B & V	Unknown	5-6.5	21.3	<32	<64	<130	--	--	--	--	--	--	--	--	--	--	--	NA
	S-5	03/03/98	B & V	Unknown	12.5-14	21.3	<31	<62	<120	--	--	--	--	--	--	--	--	--	--	--	NA
	S-9	03/03/98	B & V	Unknown	22.5-24	21.3	<31	<62	<120	--	--	--	--	--	--	--	--	--	--	--	NA
	S-12	03/03/98	B & V	Unknown	30-31.5	21.3	<27	54	120	--	--	--	--	--	--	--	--	--	--	--	NA
TB-12	16	08/01/97	B & V	Unknown	62-63	-24.5	<24	<60	<119	--	--	--	--	--	--	--	--	--	--	--	NA
TB-18	S-2	03/17/98	B & V	Unknown	5-6.5	38.3	<27	<55	<110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	S-8	03/17/98	B & V	Unknown	20-21.5	38.3	<28	<56	<110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59	NA
	S-21	03/17/98	B & V	Unknown	57.5-59	38.3	<28	<56	<110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
PW-1	Composite	1998	B & V	Unknown	--	--	<31	<63	<130	--	--	--	--	--	--	--	--	--	--	--	NA
PW-4	Composite	05/13/98	B & V	Unknown	--	--	<27	<53	<110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
CHB-07	CHB-07-5.0-7.0	04/14/08	CH2M Hill	ARI	5-7	23.5	<5	<5.9	<12	--	--	--	--	--	--	--	--	--	--	--	--
	CHB-07-12.5-13.5	04/14/05	CH2M Hill	ARI	12.5-13.5	16.5	<7.2	<6.5	<13	0.0015	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	1.1	0.0083	0.027	<0.0011	<0.0022	<0.0054
CHB-08	CHB-08-15.0-16.0	04/15/08	CH2M Hill	ARI	15-16	16.3	<5.6	<5.9	<12	<0.0008	<0.0008	<0.0008	<0.0016	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0016	<0.0041
CHB-09	CHB-09-20.0-21.5	04/16/08	CH2M Hill	ARI	20-21.5	17.5	<6.2	11	23	--	--	--	--	--	--	--	--	--	--	--	--
	CHB-09-25.0-26.5	04/16/08	CH2M Hill	ARI	25-26.5	12.5	<6.1	36	130	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012
SCLB-1	RS1-2.5/RS-1 7.5 (Composite)	03/12/93	EPJ	OnSite	2.5-7.5	--	<20	290	>100	--	--	--	--	--	--	--	--	--	--	--	--
	RS1-12.5/RS1-17.5 (Composite)	03/12/93	EPJ	OnSite	12.5-17.5	--	310	--	--	2.0	0.66	5.0	25.2 ^E	--	--	--	--	--	--	--	--
	RS-1 17.5	03/12/93	EPJ	OnSite	17.5	21.0	--	<25	--	--	--	--	--	--	--	--	--	--	--	--	--
	RS1-22.5/RS-27.5 (Composite)	03/12/93	EPJ	OnSite	22.5-27.5	--	30 ^J	--	--	0.089 ^J	0.14	0.31	1.53	--	--	--	--	--	--	--	--
	RS1-32.5	03/12/93	EPJ	OnSite	32.5	6.0	77	--	--	0.18	0.35	0.96	4.8	--	--	--	--	--	--	--	--
	RS1-37.5	03/12/93	EPJ	OnSite	37.5	1.0	<5	--	--	<0.050	<0.050	<0.050	<1.00	--	--	--	--	--	--	--	--



Table 7
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 700 Dexter Property
 700 Dexter Avenue North
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DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
SCLB-2	RS2-2.5/RS-2 7.5 (Composite)	03/12/93	EPJ	OnSite	2.5-7.5	--	110	610	>100	--	--	--	--	--	--	--	--	--	--	--	--
	RS2-12.5/RS2-17.5 (Composite)	03/12/93	EPJ	OnSite	12.5-17.5	--	1,800	--	--	4.0	24	23	115 ^E	--	--	--	--	--	--	--	--
	RS2-17.5	03/12/93	EPJ	OnSite	17.5	21.0	--	240	--	--	--	--	--	--	--	--	--	--	--	--	--
	RS2-22.5/RS2-27.5 (Composite)	03/12/93	EPJ	OnSite	22.5-27.5	--	59	--	--	0.8	1.1	0.85	3.9	--	--	--	--	--	--	--	--
	RS2-32.5	03/12/93	EPJ	OnSite	32.5	6.0	94	<25	--	1.5	2.7	1.4	6.8	--	--	--	--	--	--	--	--
	RS2-37.5	03/12/93	EPJ	OnSite	37.5	1.0	9.8	--	--	0.74	<0.05	0.11	1.34	--	--	--	--	--	--	--	--
MTCA Cleanup Level							30⁽⁷⁾	2,000⁽⁷⁾	2,000⁽⁷⁾	0.03⁽⁷⁾	7⁽⁷⁾	6⁽⁷⁾	9⁽⁷⁾	0.05⁽⁷⁾	0.03⁽⁷⁾	160⁽⁸⁾	1,600⁽⁸⁾	0.67⁽⁹⁾	4,000⁽⁸⁾	0.02⁽⁷⁾	5⁽⁷⁾

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Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Approximate Sample Elevation ⁽¹⁾ (feet below MSL)	Analytical Results (milligrams per kilogram)														
							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
SCLB-3/MW-1	RS3-2.5	03/15/93	EPJ	OnSite	2.5	37.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS3-7.5	03/15/93	EPJ	OnSite	7.5	32.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS3-17.5	03/15/93	EPJ	OnSite	17.5	22.5	210	--	--	10	7.3	3.7	15.8	--	--	--	--	--	--	--	--
	RS3-22.5/RS3-27.5 (Composite)	03/15/93	EPJ	OnSite	22.5-27.5	--	42	--	--	3.9	0.8	0.76	2.49	--	--	--	--	--	--	--	--
	RS3-32.5	03/15/93	EPJ	OnSite	32.5	7.5	<5	--	--	0.15	<0.050	<0.050	<1.00	--	--	--	--	--	--	--	--
SCLB-4/MW-2	RS4-2.5	03/15/93	EPJ	OnSite	2.5	37.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS4-7.5	03/15/93	EPJ	OnSite	7.5	32.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS4-12.5/RS4-17.5 (Composite)	03/15/93	EPJ	OnSite	12.5 - 17.5	--	<5	--	--	<0.050	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--
	RS4-22.5/RS4-27.5 Composite	03/15/93	EPJ	OnSite	22.5-27.5	--	<5	--	--	<0.050	<0.050	<0.050	0.096 ^j	--	--	--	--	--	--	--	--
	RS4-37.5	03/15/93	EPJ	OnSite	37.5	2.5	6.6 ^j	--	--	<0.050	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--
SCLB-5/MW-3	RS5-2.5/RS5-7.5 (Composite)	03/16/93	EPJ	OnSite	2.5-7.5	--	<20	<50	400	--	--	--	--	--	--	--	--	--	--	--	--
	RS5-12.5/RS5-17.5 (Composite)	03/16/93	EPJ	OnSite	12.5-17.5	--	46	--	--	0.88	0.28	0.97	1.37	--	--	--	--	--	--	--	--
	RS5-17.5	03/16/93	EPJ	OnSite	17.5	21.5	--	430	--	--	--	--	--	--	--	--	--	--	--	--	--
	RS5-22.5	03/16/93	EPJ	OnSite	22.5	16.5	17 ^j	--	--	0.2	0.099 ^j	0.33	0.446	--	--	--	--	--	--	--	--
	RS5-32.5	03/16/93	EPJ	OnSite	32.5	6.5	7.2 ^j	--	<25	0.056 ^j	<0.050	0.061	0.15	--	--	--	--	--	--	--	--
	RS5-37.5	03/16/93	EPJ	OnSite	37.5	1.5	<5	--	--	<0.050	<0.050	<0.050	<1.00	--	--	--	--	--	--	--	--
SCLB-6/MW-4	RS6-2.5	03/17/93	EPJ	OnSite	2.5	37.5	<20	<50	770	--	--	--	--	--	--	--	--	--	--	--	--
	RS6-7.5	03/17/93	EPJ	OnSite	7.5	32.5	<20	<50	770	--	--	--	--	--	--	--	--	--	--	--	--
	RS6-12.5	03/17/93	EPJ	OnSite	12.5	27.5	<20	<50	190	--	--	--	--	--	--	--	--	--	--	--	--
	RS6-17.5/RS6-22.5 (Composite)	03/17/93	EPJ	OnSite	17.5-22.5	--	<5.0	--	--	<0.050	<0.050	<0.050	0.092 ^j	--	--	--	--	--	--	--	--
	RS6-27.5	03/17/93	EPJ	OnSite	27.5	12.5	<5.0	--	--	<0.050	<0.050	<0.050	<1.00	--	--	--	--	--	--	--	--
SCLB-7/MW-5	RS7-2.5	03/17/93	EPJ	OnSite	2.5	37.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS7-7.5	03/17/93	EPJ	OnSite	7.5	32.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS7-12.5	03/17/93	EPJ	OnSite	12.5	27.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS7-17.5	03/17/93	EPJ	OnSite	17.5	22.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
	RS7-22.5	03/17/93	EPJ	OnSite	22.5	17.5	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	MW6-25	10/11/93	Retec	ARI	25	13.2	19	--	--	3.5	0.23	0.44	0.93	--	--	--	--	--	--	--	
MW-7	MW7-16.5	10/11/93	Retec	ARI	16.5	18.6	4,100	--	--	7.1	160	54	300	--	--	--	--	--	--	--	
	MW7-18.5	10/11/93	Retec	ARI	18.5	16.6	840	--	--	2.2	30	12	62	--	--	--	--	--	--	--	
MW-8	MW8-20	10/18/93	Retec	AAL	20	13.2	<5.0	--	--	<0.059	<0.059	<0.059	<0.12	--	--	--	--	--	--	--	



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							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾	
MW-9	MW9-17.5	10/18/93	Retec	AAL	17.5	23.6	<5.0	--	--	<0.068	<0.068	<0.068	<0.14	--	--	--	--	--	--	--	--	
MW10	MW10-17.5	10/19/93	Retec	AAL	17.5	20.5	<5.0	--	--	<0.068	<0.068	<0.068	<0.14	--	--	--	--	--	--	--	--	
RB1	RB1-17.5	10/18/93	Retec	AAL	17.5	18.4	<5.0	--	--	<0.063	<0.063	<0.063	<0.13	--	--	--	--	--	--	--	--	
RB2	RB2-12.5	10/18/93	Retec	AAL	12.5	23.6	<5.0	--	--	<0.062	<0.062	<0.062	<0.012	--	--	--	--	--	--	--	--	
	RB2-17.5	10/18/93	Retec	AAL	17.5	18.6	<5.0	--	--	0.045 ¹	<0.062	0.058 ¹	0.18	--	--	--	--	--	--	--	--	
RB3	RB3-17.5	10/18/93	Retec	AAL	17.5	20.5	<5.0	--	--	<0.061	<0.061	<0.061	<0.12	--	--	--	--	--	--	--	--	
SCL-B100	B-100, S1	06/10/02	Urban	F&BI	NA	--	<1	<50	--	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
	B-100, S2	06/10/02	Urban	F&BI	NA	--	<1	<50	--	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
MTCA Cleanup Level							30 ⁽⁷⁾	2,000 ⁽⁷⁾	2,000 ⁽⁷⁾	0.03 ⁽⁷⁾	7 ⁽⁷⁾	6 ⁽⁷⁾	9 ⁽⁷⁾	0.05 ⁽⁷⁾	0.03 ⁽⁷⁾	160 ⁽⁸⁾	1,600 ⁽⁸⁾	0.67 ⁽⁹⁾	4,000 ⁽⁸⁾	0.02 ⁽⁷⁾	5 ⁽⁷⁾	

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							GRPH ⁽²⁾	DRPH ⁽³⁾	ORPH ⁽³⁾	Benzene ⁽⁴⁾	Toluene ⁽⁴⁾	Ethylbenzene ⁽⁴⁾	Total Xylenes ⁽⁴⁾	PCE ⁽⁵⁾	TCE ⁽⁵⁾	cis 1,2-DCE ⁽⁵⁾	trans 1,2-DCE ⁽⁵⁾	Vinyl Chloride ⁽⁵⁾	1,1-DCE ⁽⁵⁾	Methylene Chloride ⁽⁵⁾	Naphthalene ⁽⁶⁾
SCL-B101	B-101-S1&2	06/17/02	Urban	F&BI	NA	--	2	140	--	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
	B101-S3	06/17/02	Urban	F&BI	NA	--	<1	<50	--	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
SCL-B102	B102-S2	06/17/02	Urban	F&BI	NA	--	<1	<50	--	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
	B102-S1	06/17/02	Urban	F&BI	NA	--	6	430	--	0.03	0.09	0.04	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
SCL-MW101	MW101-S3	06/14/02	Urban	F&BI	NA	--	<1	--	--	0.07	<0.02	0.04	0.05	--	--	--	--	--	--	--	--
SCL-MW102	MW-102, S1	06/10/02	Urban	F&BI	NA	--	99	--	--	0.67	0.47	1.0	2.5	--	--	--	--	--	--	--	--
	MW-102, S2	06/10/02	Urban	F&BI	NA	--	2	--	--	0.05	<0.02	0.12	0.07	--	--	--	--	--	--	--	--
SCL-MW103	MW103-S1&S2	06/14/02	Urban	F&BI	NA	--	<1	--	--	<0.02	<0.02	<0.02	<0.02	--	--	--	--	--	--	--	--
SCL-MW105	MW-105, S2	06/10/02	Urban	F&BI	NA	--	650	--	--	2.1	1.5	11	24	--	--	--	--	--	--	--	--
	MW-105, S4	06/10/02	Urban	F&BI	NA	--	<1	--	--	0.05	<0.02	<0.02	0.03	--	--	--	--	--	--	--	--
SSD-MW-1	MW-1 S-2	05/24/89	Hart Crowser	Unknown	5-6.5	34.0	4 ⁽¹¹⁾	--	--	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--
	MW-1 S-6	05/24/89	Hart Crowser	Unknown	15-16.5	24.0	332 ⁽¹¹⁾	--	--	<0.01	1.03	2.84	6.25	--	--	--	--	--	--	--	--
SSD-MW-2	MW-2 S-3	05/24/89	Hart Crowser	Unknown	7.5-9	31.0	338 ⁽¹¹⁾	--	--	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--
	MW-2 S-6	05/24/89	Hart Crowser	Unknown	15-16.5	31.0	71 ⁽¹¹⁾	--	--	<0.01	0.53	<0.01	<0.01	--	--	--	--	--	--	--	--
SSD-MW-3	MW-3 S-2	05/24/89	Hart Crowser	Unknown	5-6.5	34.0	<1 ⁽¹¹⁾	--	--	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--
	MW-3 S-5	05/24/89	Hart Crowser	Unknown	12.5-14	34.0	5 ⁽¹¹⁾	--	--	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--
SSD-MW-4	MW-4 S-6	05/25/89	Hart Crowser	Unknown	14.5-16	36.8	6 ⁽¹¹⁾	--	--	<0.01	<0.01	0.069	0.096	NA	NA	NA	NA	NA	NA	NA	NA
	MW-4 S-9	05/25/89	Hart Crowser	Unknown	22-23	29.5	9 ⁽¹¹⁾	--	--	<0.01	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.014 ^{B,J}	--
B-1A	B-1/S-2	12/01/89	Hart Crowser	ARI	10.5	--	800 ⁽¹¹⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2A	B-2/S-1	12/01/89	Hart Crowser	ARI	10	--	12 ⁽¹¹⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level							30⁽⁷⁾	2,000⁽⁷⁾	2,000⁽⁷⁾	0.03⁽⁷⁾	7⁽⁷⁾	6⁽⁷⁾	9⁽⁷⁾	0.05⁽⁷⁾	0.03⁽⁷⁾	160⁽⁸⁾	1,600⁽⁸⁾	0.67⁽⁹⁾	4,000⁽⁸⁾	0.02⁽⁷⁾	5⁽⁷⁾

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for soil.

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Sample elevations calculated by subtracting the sample depth from the top of monument elevation, as surveyed by Bush, Roed & Hitchings, Inc. of Seattle, Washington, in February, October, and December 2012 and March 2013, using the North American Vertical Datum 1988. For historical sample locations not surveyed in 2012 or 2013, the elevations were estimated using City of Seattle's GIS 2-foot interval topographic contours.

⁽²⁾Analyzed by Method WTPH-HCID, EPA Method 8020, EPA Method 8015M, or NWTPH-Gx.

⁽³⁾Analyzed by Method WTPH-HCID, EPA Method 8015M, ORPH analyzed by EPA Method WTPH-HCID, or Method 418.1.

⁽⁴⁾Analyzed by EPA Methods 8020, 8021B, 8260B, 624/8240, or 8260C.

⁽⁵⁾Analyzed by EPA Methods 8010, 8260B, or 8260C.

⁽⁶⁾Analyzed by EPA Methods 8010, 8260B, 8260C, 8270, 8270D, or 8270D-SIM.

⁽⁷⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

⁽⁸⁾CLARC, Soil, Method B, Non Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>. Updated August 2015.

⁽⁹⁾CLARC, Soil, Method B, Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>. Updated August 2015.

⁽¹⁰⁾Boring was installed at a 25 degree angle from the vertical point of penetration. Soil depths and elevations corrected to actual vertical depth.

⁽¹¹⁾Result reported as total petroleum hydrocarbons.

Laboratory Notes:

^BAnalyte detected in an associated Method Blank.

^EEstimated value. The reported range exceeds the calibration range of the analysis.

^LEstimated concentration.

^CThe presence of the compound indicated is likely due to laboratory contamination.

^TAnalyte also detected in trip blank.

-- = not analyzed or not measured

< = not detected at a concentration exceeding laboratory reporting limit

> = concentration of analyte is greater than the laboratory detection limit, but not quantified

AAL = Alden Analytical Laboratories, Inc., of Seattle, Washington

ARI = Analytical Resources, Inc.

B & V = Black & Veatch

bgs = below ground surface

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

DRPH = diesel-range petroleum hydrocarbons

DUP = duplicate

EPA = U.S. Environmental Protection Agency

EPJ = E.P. Johnson Construction, Inc. & Environmental

F&BI = Friedman & Bruya, Inc., of Seattle, Washington

GeoEngineers = GeoEngineers, Inc.

GRPH = gasoline-range petroleum hydrocarbons

Hart Crowser = Hart Crowser, Inc.

HCID = hydrocarbon identification

MSL mean sea level

MTCA = Washington State Model Toxics Control Act

NA = results not available

NCA = North Creek Analytical, of Bothell, Washington

ND = not detected above laboratory reporting limit; reporting limit not available

NWTPH = northwest total petroleum hydrocarbon

OnSite = OnSite Environmental Inc., of Redmond, Washington

ORPH = oil-range petroleum hydrocarbons

Retec = Remediation Technologies, Inc.

Roux = Roux Associates

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

Urban = Urban Redevelopment LLC

Windward = Windward Environmental LLC

Table 8
Excavation Soil Analytical Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)																	
						GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	Cis 1,2-DCE ⁽⁴⁾	Trans 1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾	1,1-DCE ⁽⁴⁾	Methylene Chloride ⁽⁴⁾	Napthalene ⁽⁵⁾	Total PAHs ⁽⁶⁾⁽⁷⁾		
The Property																							
Sump No. 4	Sump4_Soil_01	07/22/11	SoundEarth	F&BI	1	--	--	--	<0.03	<0.05	<0.05	<0.15	19	0.037	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5		
Excavation 1	EX01-S01-04	02/09/12	SoundEarth	F&BI	4	--	--	--	--	--	--	--	14	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--		
	EX01-S02-02.5				2.5	--	--	--	--	--	--	--	--	--	3.7	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
	EX01-S03-05				5	--	--	--	--	--	--	--	--	--	19	0.052	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	EX01S04-4.2 ^{ht}	02/10/12			4.2	--	--	--	--	--	--	--	--	--	150	0.44	<0.05	<0.05	<0.05	<0.05	<0.05	0.92 ^{lc}	--
	EX01S05-6 ^{ht}				6	--	--	--	--	--	--	--	--	--	190	0.38	0.23	<0.05	<0.05	<0.05	<0.05	0.51 ^{lc}	--
	EX01S07-2.5 ^{ht}				2.5	--	--	--	--	--	--	--	--	--	--	5.4	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	0.52 ^{lc}
EX01-S18-07.5	03/21/12	7.5	--	--	--	--	--	--	--	--	--	0.98	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--			
Tank 1 Excavation	Tank1-SSW06	03/22/13	SoundEarth	F&BI	6	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Tank1-WSW06				6	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Tank1-F08				8	--	120 ^x	340	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tank 2 Excavation	Tank2-NSW06	03/22/13	SoundEarth	F&BI	6	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Tank2-F08				8	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tank 3 Excavation	Tank3-ESW05	03/22/13	SoundEarth	F&BI	5	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Tank3-SSW05				5	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Tank3-F08				8	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tank 4 Excavation	Tank4-NSW08	03/22/13	SoundEarth	F&BI	8	--	460 ^x	360	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Tank4-F10				10	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tank 5 Excavation	Tank5-ESW02	03/22/13	SoundEarth	F&BI	2	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--		
	Tank5-WSW02				2	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Tank5-F03				3	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
East-Adjoining Properties - 753 9th Avenue North Parcel																							
Tank 1 and 2 Excavation	T12-SPLS-1	07/22/92	GeoTech	OnSite	7	3,000 ^M	--	--	<0.25	1	22	111	--	--	--	--	--	--	--	--	--		
	T12-B-1	07/22/92	GeoTech	OnSite	14	80	--	--	0.6	0.06	0.92	2.24	--	--	--	--	--	--	--	--	--		
	T12-CL-1	07/22/92	GeoTech	OnSite	4	<50	--	--	<0.05	<0.05	<0.05	<0.10	--	--	--	--	--	--	--	--	--		
Tank 3 Excavation	T3-SPLS-2	07/22/92	GeoTech	OnSite	7.5	1,700 ^M	--	--	<0.05	1.6	4.6	9.5	--	--	--	--	--	--	--	--	--		
	T3-CL-1	07/22/92	GeoTech	OnSite	4	<50	--	--	<0.05	<0.05	<0.05	<0.10	--	--	--	--	--	--	--	--	--		
East-Adjoining Properties - 800 Roy Street Parcel																							
RS-01	RS-1	03/01/93	EPJ	OnSite	3	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--		
RS-02	RS-2	03/01/93	EPJ	OnSite	6	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--		
RS-04	RS-4	03/03/93	EPJ	OnSite	7	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--		
RS-05	RS-5	03/03/93	EPJ	OnSite	9	1,700	--	--	<0.25	1.5	8.3	29.2	--	--	--	--	--	--	--	--	--		
RS-06	RS-6	03/03/93	EPJ	OnSite	8	88	--	--	<0.05	<0.05	<0.05	0.31	--	--	--	--	--	--	--	--	--		
RS-07	RS-7	03/03/93	EPJ	OnSite	7	1,500	--	--	<0.25	1.4	9.6	69	--	--	--	--	--	--	--	--	--		
RS-08	RS-8	03/03/93	EPJ	OnSite	8	3,400	--	--	<0.25	1.2	21	71	--	--	--	--	--	--	--	--	--		
RS-09	RS-9	03/03/93	EPJ	OnSite	7	24	--	--	<0.05	<0.05	0.066	20.8	--	--	--	--	--	--	--	--	--		
RS-10	RS-10	03/03/93	EPJ	OnSite	13	140	--	--	2.3	0.32	1.1	2.49	--	--	--	--	--	--	--	--	--		
RS-11	RS-11	03/03/93	EPJ	OnSite	8	60	--	--	0.15	0.0088	0.18	0.5	--	--	--	--	--	--	--	--	--		
RS-12	RS-12	03/03/93	EPJ	OnSite	10	3,800	--	--	2.5	1.4	14	20.8	--	--	--	--	--	--	--	--	--		
RS-13	RS-13	03/03/93	EPJ	OnSite	9	3,100	--	--	4.1	1.4	27	26	--	--	--	--	--	--	--	--	--		
RS-14	RS-14	03/03/93	EPJ	OnSite	8	1,100	--	--	0.69	2.2	7.3	33	--	--	--	--	--	--	--	--	--		
RS-15	RS-15	03/03/93	EPJ	OnSite	4	1,900	--	--	5.1	1.7	28	279	--	--	--	--	--	--	--	--	--		
RS-16	RS-16	03/03/93	EPJ	OnSite	4	15,000	--	--	100	260	170	460	--	--	--	--	--	--	--	--	--		
RS-17	Stockpile	03/04/93	EPJ	OnSite	--	18,000 ^{B,E}	--	--	170 ^E	300 ^{B,E}	200 ^E	530 ^E	--	--	--	--	--	--	--	--	--		
RS-18	Stockpile	03/04/93	EPJ	OnSite	--	1,700 ^B	--	--	1.5	7.4	4.8	41	--	--	--	--	--	--	--	--	--		
RS-19	Stockpile - Sludge from cleaning out USTs 1 and 2	03/10/93	EPJ	OnSite	--	120,000 ^E	--	--	1,700 ^E	2,200 ^E	1,200 ^E	3,200 ^E	--	--	--	--	--	--	--	--	--		
RS-21	RS-21	03/05/93	EPJ	OnSite	20	3,700	--	--	3	79 ^E	45 ^E	226 ^E	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	<0.050	--		
RS-22	RS-22	03/05/93	EPJ	OnSite	10	6,900	--	--	<0.25	1.1	16	73 ^E	<0.040	<0.040	--	<0.040	<0.040	<0.040	<0.040	<0.040	--		
RS-23	Stockpile	03/05/93	EPJ	OnSite	--	4,600	--	--	0.88	18	42 ^E	199 ^E	--	--	--	--	--	--	--	--	--		
MTCA Cleanup Level for Soil						30 ⁽⁸⁾	2,000 ⁽⁸⁾	2,000 ⁽⁸⁾	0.03 ⁽⁸⁾	7 ⁽⁸⁾	6 ⁽⁸⁾	9 ⁽⁸⁾	0.05 ⁽⁸⁾	0.03 ⁽⁸⁾	160 ⁽⁹⁾	1,600 ⁽⁹⁾	0.67 ⁽¹⁰⁾	4,000 ⁽⁸⁾	0.02 ⁽⁸⁾	5 ⁽⁸⁾	0.1 ⁽⁸⁾⁽¹¹⁾		

Table 8
Excavation Soil Analytical Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)																
						GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	Cis 1,2-DCE ⁽⁴⁾	Trans 1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾	1,1-DCE ⁽⁴⁾	Methylene Chloride ⁽⁴⁾	Napthalene ⁽⁵⁾	Total PAHs ⁽⁶⁾⁽⁷⁾	
East-Adjoining Properties - 800 Roy Street Parcel																						
RS-24	Stockpile	03/05/93	EPJ	OnSite	--	15	--	--	<0.050	<0.050	0.070	0.32	--	--	--	--	--	--	--	--	--	
RS-25	Stockpile	03/05/93	EPJ	OnSite	--	2,600	--	--	<0.25	7.4	18	129 ^E	--	--	--	--	--	--	--	--	--	
RS-26	RS-26	03/08/93	EPJ	OnSite	20	3,700 ^B	--	--	6.3	76 ^{B,E}	50 ^E	216 ^E	--	--	--	--	--	--	--	--	--	
RS-26A	Pit #3	03/16/93	EPJ	OnSite	20	1,100	--	--	2.5	25	15	76 ^E	--	--	--	--	--	--	--	--	--	
RS-27	RS-27	03/08/93	EPJ	OnSite	6	15 ^{B,J}	--	--	<0.050	0.33 ^B	0.19	0.95 ^B	--	--	--	--	--	--	--	--	--	
RS-28	RS-28	03/08/93	EPJ	OnSite	6	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-29	RS-29	03/08/93	EPJ	OnSite	20	2,000 ^B	--	--	0.86	24 ^B	33	168 ^{B,E}	--	--	--	--	--	--	--	--	--	
RS-30	Stockpile	03/09/93	EPJ	OnSite	--	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-31	Stockpile	03/09/93	EPJ	OnSite	--	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-32	Stockpile	03/09/93	EPJ	OnSite	--	<20	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-33	Stockpile	03/09/93	EPJ	OnSite	--	<20	<50	220	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-34	Stockpile	03/09/93	EPJ	OnSite	--	<20	<50	220	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-35	Stockpile	03/09/93	EPJ	OnSite	--	<20	<50	220	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-36	Stockpile	03/09/93	EPJ	OnSite	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RS-37	Stockpile	03/09/93	EPJ	OnSite	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PD-1	PD-1	06/28/93	Retec	AAL	19	3,300	--	--	17	45	39	221	--	--	--	--	--	--	--	--	--	
PD-2	PD-2	06/28/93	Retec	AAL	10	<19	--	--	<0.25	<20	<10	<10.0	--	--	--	--	--	--	--	--	--	
PD-3	PD-3	06/28/93	Retec	AAL	17	1,700	--	--	7.5	<20	12	60	--	--	--	--	--	--	--	--	--	
PD-4	PD-4	06/28/93	Retec	AAL	17	<19	--	--	<0.25	<20	<10	<10.0	--	--	--	--	--	--	--	--	--	
PD-5	PD-5	06/28/93	Retec	AAL	10	<19	--	--	<0.25	<20	<10	<10.0	--	--	--	--	--	--	--	--	--	
TS1	TS1-17	09/27/93	Retec	ARI	17	110	--	--	0.29	1.8	2.1	11	--	--	--	--	--	--	--	--	--	
TS2	TS2-15	09/27/93	Retec	ARI	15	41	--	--	0.14	<0.064	0.46	0.67	--	--	--	--	--	--	--	--	--	
TS4	TS4-25	10/04/93	Retec	ARI	25	1,400	--	--	8.2	51	22	120	--	--	--	--	--	--	--	--	--	
TS5	TS5-10	10/04/93	Retec	ARI	10	1,200	--	--	<0.58	9.3	10	68	--	--	--	--	--	--	--	--	--	
TS6	TS6-19	10/04/93	Retec	ARI	19	1,300	--	--	7.7	43	22	120	--	--	--	--	--	--	--	--	--	
TS7	TS7-15	10/04/93	Retec	ARI	15	<5.0	--	--	<0.056	<0.056	<0.056	<0.11	--	--	--	--	--	--	--	--	--	
TS8	TS8-25	10/04/93	Retec	ARI	25	560	--	--	3.5	20	9.1	50	--	--	--	--	--	--	--	--	--	
TS9	TS9-25	10/04/93	Retec	ARI	25	1,600	--	--	2.9	7.6	24	110	--	--	--	--	--	--	--	--	--	
TS10	TS10-15	10/06/93	Retec	ARI	15	37	--	--	0.1	0.82	0.82	4.3	--	--	--	--	--	--	--	--	--	
TS11	TS11-10	10/06/93	Retec	ARI	10	<5.0	--	--	<0.056	<0.056	<0.056	<0.113	--	--	--	--	--	--	--	--	--	
TS12	TS12-10	10/06/93	Retec	ARI	10	<5.0	--	--	<0.056	<0.056	<0.056	<0.113	--	--	--	--	--	--	--	--	--	
TS13	TS13-18	10/06/93	Retec	ARI	18	360	--	--	4.8	4.6	4.6	27	--	--	--	--	--	--	--	--	--	
TS15	TS15-15	10/14/93	Retec	AAL	15	1,500	--	--	3.3	28	23	130	--	--	--	--	--	--	--	--	--	
SP-1	SP-1 (S-1)	06/11/02	Urban	F&BI	NA	7	2,400	--	--	--	--	--	--	--	--	--	--	--	--	--	0.18	
	NA				2	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP-2	SP-2 (S-1)	06/11/02	Urban	F&BI	NA	<1	740	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	NA				<1	230	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP-3	SP-3 (S-1)	06/11/02	Urban	F&BI	NA	--	670	--	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	0.18	
SP-4	SP-4 (S-1)	06/11/02	Urban	F&BI	NA	--	320	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SP-5	SP-5 (S-1)	06/11/02	Urban	F&BI	NA	--	280	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SP-6	SP-6 (S-1)	06/11/02	Urban	F&BI	NA	--	190	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	NA				<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP-7	SP-7 (S-1)	06/11/02	Urban	F&BI	NA	--	210	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	
SP-8	SP-8 (S-1)	06/11/02	Urban	F&BI	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.14
	NA				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP-9	SP-9 (S-1)	06/11/02	Urban	F&BI	NA	32	1,800	--	0.14	0.17	0.13	0.47	--	--	--	--	--	--	--	--	--	
	NA				500	--	0.94	1.7	3.3	5.1	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Cleanup Level for Soil						30⁽⁸⁾	2,000⁽⁸⁾	2,000⁽⁸⁾	0.03⁽⁸⁾	7⁽⁸⁾	6⁽⁸⁾	9⁽⁸⁾	0.05⁽⁸⁾	0.03⁽⁸⁾	160⁽⁹⁾	1,600⁽⁹⁾	0.67⁽¹⁰⁾	4,000⁽⁸⁾	0.02⁽⁸⁾	5⁽⁸⁾	0.1⁽⁸⁾⁽¹¹⁾	

Table 8
Excavation Soil Analytical Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)																
						GRPH ⁽¹⁾	DRPH ⁽²⁾	ORPH ⁽²⁾	Benzene ⁽³⁾	Toluene ⁽³⁾	Ethylbenzene ⁽³⁾	Total Xylenes ⁽³⁾	PCE ⁽⁴⁾	TCE ⁽⁴⁾	Cis 1,2-DCE ⁽⁴⁾	Trans 1,2-DCE ⁽⁴⁾	Vinyl Chloride ⁽⁴⁾	1,1-DCE ⁽⁴⁾	Methylene Chloride ⁽⁴⁾	Napthalene ⁽⁵⁾	Total PAHs ⁽⁶⁾⁽⁷⁾	
East-Adjoining Properties - 800 Roy Street Parcel																						
SP-10	SP-10 (S-2)	06/11/02	Urban	F&BI	NA	3,400	--	--	9.6	11	60	240	--	--	--	--	--	--	--	--		
SP-11	SP-11 (S-1)	06/11/02	Urban	F&BI	NA	<1	--	--	<0.02	<0.02	<0.02	<0.02	--	--	--	--	--	--	--	--		
SP-12	SP-12 (S-1)	06/11/02	Urban	F&BI	NA	9	--	--	0.10	0.07	0.04	0.06	--	--	--	--	--	--	--	--		
SP-13	SP-13 (S-1)	06/11/02	Urban	F&BI	NA	26	--	--	0.34	0.17	0.03	0.15	--	--	--	--	--	--	--	--		
SP-14	SP-14 (S-1)	06/11/02	Urban	F&BI	NA	600	--	--	0.81	3.3	9.7	36	--	--	--	--	--	--	--	--		
SP-15	SP-15 (S-6)	06/11/02	Urban	F&BI	NA	<1	--	--	<0.02	<0.02	<0.02	<0.02	--	--	--	--	--	--	--	--		
SP-16	SP16 (S1 & S2)	06/12/02	Urban	F&BI	NA	--	650	--	--	--	--	--	--	--	--	--	--	--	--	--		
	SP16 (S-5)				NA	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	SP16 (S-6)				NA	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SP16 (S-7)				NA	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP-17	SP 17 (S-2)	06/12/02	Urban	F&BI	NA	530	--	--	2.6	24	15	66	--	--	--	--	--	--	--	--		
	SP 17 (S-3)				NA	11	--	--	0.04	0.07	0.29	0.26	--	--	--	--	--	--	--	--	--	
SP-18	SP 18 (S-2)	06/12/02	Urban	F&BI	NA	2,600	--	--	12	83	74	320	--	--	--	--	--	--	--	--		
SP-19	SP 19 (S-1)	06/12/02	Urban	F&BI	NA	85	570	--	2.2	1.0	1.9	3.6	--	--	--	--	--	--	--	--		
	SP 19 (S-2)				NA	4,100	--	--	16	120	110	500	--	--	--	--	--	--	--	--	--	
SP-20	SP20 (S-2-5')	06/12/02	Urban	F&BI	NA	5	--	--	0.14	0.03	0.15	0.26	--	--	--	--	--	--	--	--		
	SP20 (S-2-8')				NA	<1	--	--	0.07	<0.02	<0.02	0.05	--	--	--	--	--	--	--	--	--	
SP-21	SP-21 (S-1)	06/12/02	Urban	F&BI	NA	25	350	--	0.84	0.23	0.17	0.17	--	--	--	--	--	--	--	--		
	SP-21 (S-2)				NA	1,200	--	--	3.5	12	19	52	--	--	--	--	--	--	--	--	--	
MTCA Cleanup Level for Soil						30⁽⁸⁾	2,000⁽⁸⁾	2,000⁽⁸⁾	0.03⁽⁸⁾	7⁽⁸⁾	6⁽⁸⁾	9⁽⁸⁾	0.05⁽⁸⁾	0.03⁽⁸⁾	160⁽⁹⁾	1,600⁽⁹⁾	0.67⁽¹⁰⁾	4,000⁽⁸⁾	0.02⁽⁸⁾	5⁽⁸⁾	0.1⁽⁸⁾⁽¹¹⁾	

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for soil.

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Analyzed by Method WTPH-HCID, EPA Method 8020, EPA Method 8015M, or NWTPH-Gx.

⁽²⁾Analyzed by Method WTPH-HCID, EPA Method 8015M, ORPH analyzed by EPA Method WTPH-HCID, or Method 418.1.

⁽³⁾Analyzed by EPA Methods 8020, 8021B, 8260B, 624/8240, or 8260C.

⁽⁴⁾Analyzed by EPA Methods 8010, 8260B, or 8260C.

⁽⁵⁾Analyzed by EPA Methods 8010, 8260B, 8260C, 8270, 8270D, or 8270D-SIM.

⁽⁶⁾Analyzed by EPA Method 8270D-SIM.

⁽⁷⁾When determining the total TEC of benzo(a)pyrene for a sample, the concentrations of each of the seven cPAHs listed in table 708-2 (under WAC 173-340-900) is multiplied by its corresponding TEF. The sum of these seven factors equal the total TEC. When the analytical result for any individual cPAH is reported as less than the LRL, half of the LRL is used as the concentrations for the calculation. The resultant total TEC concentration is then compared to the cleanup level for benzo(a)pyrene.

⁽⁸⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

⁽⁹⁾CLARC, Soil, Method B, Non Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

⁽¹⁰⁾CLARC, Soil, Method B, Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

⁽¹¹⁾The cleanup level for carcinogenic PAHs is based on direct contact using Equation 740-2 under WAC 173-340-740. When establishing and determining compliance with cleanup levels for mixtures of carcinogenic PAHs, the mixture of carcinogenic PAHs is considered a single hazardous substance. Benzo(a)pyrene's cleanup level is used as the cleanup level for the mixture.

Laboratory Notes:

^aAnalyte detected in an associated Method Blank.

^bEstimated value. The reported range exceeds the calibration range of the analysis.

^{ht}Analysis performed outside the method or client-specified holding time requirement.

ⁱEstimated concentration.

^{lc}The presence of the compound indicated is likely due to laboratory contamination.

^mHeadspace present in sample.

ⁿThe sample chromatographic pattern does not resemble the fuel standard used for quantitation.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

AAL = Alden Analytical Laboratories, Inc., of Seattle, Washington

ARI = Analytical Resources, Inc.

bgs = below ground surface

CLARC = cleanup levels and risk calculations

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

DCE = dichloroethylene

DRPH = diesel-range petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency

EPJ = E.P. Johnson Construction, Inc. & Environmental

F&BI = Friedman & Bruya, Inc., of Seattle, Washington

GeoTech = GeoTech Consultants, Inc.

GRPH = gasoline-range petroleum hydrocarbons

Hart Crowser = Hart Crowser, Inc.

HCID = hydrocarbon identification

LRL = laboratory reporting limit

MTCA = Washington State Model Toxics Control Act

NA = results not available

NWTPH = northwest total petroleum hydrocarbon

OnSite = OnSite Environmental Inc., of Redmond, Washington

ORPH = oil-range petroleum hydrocarbons

PAHs = polycyclic aromatic hydrocarbons

PCE = tetrachloroethylene

Retec = Remediation Technologies, Inc.

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

TEC = toxicity equivalent concentration

TEF = total equivalency factor

Urban = Urban Redevelopment LLC

UST = underground storage tank

WAC = Washington State Administrative Code



Table 9
Soil Analytical Results for Metals
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Laboratory	Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)							
						Arsenic ⁽¹⁾	Barium ⁽¹⁾	Cadmium ⁽¹⁾	Chromium ⁽¹⁾	Lead ⁽¹⁾	Mercury ⁽²⁾	Selenium ⁽¹⁾	Silver ⁽¹⁾
The Property													
Tank 2 Excavation	Tank2-F08	03/22/13	SoundEarth	F&BI	8	1.81	39.4	<1	10.8	6.94	0.28	<1	<1
East-Adjoining Properties - 800 Roy Street Parcel													
RS-05	RS-5	03/03/93	EPJ	SAS	9	--	--	--	--	32	--	--	--
RS-10	RS-10	03/03/93	EPJ	SAS	13	--	--	--	--	71	--	--	--
RS-15	RS-15	03/03/93	EPJ	SAS	4	--	--	--	--	480	--	--	--
RS-16	RS-16	03/03/93	EPJ	SAS	4	--	--	--	--	80	--	--	--
RS-17 & RS-24	RS-17/RS-24	03/03-04/93	EPJ	SAS	--	<4.2	260	1.4	24	120	0.33	<4.2	0.79
SCL-B100	B-100, S1	06/10/02	Urban	F&BI	NA	<10	50	<1.0	25	4.5	<0.200	<10	<10
	B-100, S2				NA	<10	45	<1.0	24	4.1	<0.200	<10	<10
SP-1	SP-1 (S-1)	06/11/02	Urban	F&BI	NA	<10	170	<1.0	24	140	1.28	<10	<10
SP-2	SP-2 (S-2)	06/11/02	Urban	F&BI	NA	<10	83	1.7	18	44	<0.200	<10	<10
SP-3	SP-3 (S-1)	06/11/02	Urban	F&BI	NA	<10	120	<1.0	20	230	1.32	<10	<10
SP-7	SP-7 (S-1)	06/11/02	Urban	F&BI	NA	16	230	1.0	18	410	2.81	<10	<10
SP-16	SP16 (S1 & S2)	06/12/13	Urban	F&BI	NA	<10	400	<1.0	30	220	0.247	<10	<10
SCL-B101	B-101- S1&2	06/17/02	Urban	F&BI	NA	<10	170	<1.0	18	230	NA	<10	<10
	B101-S3				NA	<10	82	<1.0	27	5.3	NA	<10	<10
SCL-B102	B102-S2	06/17/02	Urban	F&BI	NA	<10	59	<1.0	28	9.9	NA	<10	<10
	B102-S1				NA	<10	210	<1.0	24	440	NA	<10	<10
SCL-MW-101	MW101-S3	06/14/02	Urban	F&BI	NA	<10	27	<1.0	16	3.6	NA	<10	<10
SCL-MW-103	MW103-S1&S2	06/14/02	Urban	F&BI	NA	<10	35	<1.0	33	4.5	NA	<10	<10
MTCA Cleanup Level						20⁽³⁾	16,000⁽⁴⁾	2⁽³⁾	2,000⁽³⁾	250⁽³⁾	2⁽³⁾	400⁽⁴⁾	400⁽⁴⁾

NOTES:

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Analyzed by EPA Methods 200.8 or 6010.

⁽²⁾Analyzed by EPA Method 1631E or 7471.

⁽³⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

⁽⁴⁾CLARC, Soil, Method B, Non Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>>. Updated August 2015.

-- = not analyzed

< = not detected at a concentration exceeding the laboratory reporting limit

bgs = below ground surface

CLARC = cleanup levels and risk calculations

EPA = U.S. Environmental Protection Agency

EPJ = E.P. Johnson Construction, Inc. & Environmental

F&BI = Friedman & Bruya, Inc., of Seattle, Washington

MTCA = Washington State Model Toxics Control Act

NA = results not available

SAS = SoundAnalytical Services, Inc., of Tacoma, Washington

SoundEarth = SoundEarth Strategies, Inc.

Urban = Urban Redevelopment LLC



Table 10
Metal Toxicity Characteristic Leaching Procedure Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Sample Depth (feet bgs)	Analytical Results (milligrams per liter)							
					Arsenic ⁽¹⁾	Barium ⁽¹⁾	Cadmium ⁽¹⁾	Chromium ⁽¹⁾	Lead ⁽¹⁾	Mercury ⁽²⁾	Selenium ⁽¹⁾	Silver ⁽¹⁾
East-Adjoining Properties - 800 Roy Street Parcel												
RS-19	Stockpile - Sludge from cleaning out USTs 1 and 2	03/10/93	EPJ	--	0.20	0.42	0.50	0.01	2.8	<0.002	<0.14	<0.01
RS-25	Stockpile	03/05/93	EPJ	--	<0.10	1.0	<0.005	<0.01	0.29	<0.002	<0.15	<0.01
Dangerous Waste Characteristics⁽³⁾					5.0	100	1.0	5.0	5.0	0.2	1.0	5

NOTES:

Laboratory analyses conducted by SoundAnalytical Services, Inc., of Tacoma, Washington.

⁽¹⁾Analyzed by EPA Method 6010.

⁽²⁾Analyzed by EPA Method 7471.

⁽³⁾Washington State Dangerous Waste Maximum Concentration of Contaminants for the Toxicity Characteristic, Chapter 173-303-090 of the Washington Administrative Code.

-- = not measured

< = not detected at a concentration exceeding laboratory reporting limit

bgs = below ground surface

EPA = U.S. Environmental Protection Agency

EPJ = E.P. Johnson Construction, Inc. & Environmental

USTs = underground storage tank



Table 11
Chlorinated Volatile Organic Compound Toxicity Characteristic Leaching Procedure Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Sample Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per liter)							
					PCE	TCE	1,1-DCE	Vinyl Chloride	EDC	MEK (2-Butanone)	Carbon Disulfide	Chloroform
The Property												
G-MW1	MW-1-8-20	07/20/01	GeoEngineers	20	99.3 ^B	<0.0800	<0.0800	<0.0800	<0.0800	<0.0800	<0.0800	<0.0800
G-SB4/G-MW3	SB4-7-17.5	07/20/01	GeoEngineers	17.5	0.182 ^B	<0.0800	<0.0800	<0.0800	<0.0800	<0.0800	<0.0800	<0.0800
Dangerous Waste Characteristics⁽²⁾					0.7	0.5	0.7	0.2	0.5	200	NE	6

NOTES:

Laboratory analyses conducted by North Creek Analytical, Inc. of Bothell, Washington.

RED indicates concentration exceeds Washington State's Dangerous Waste Characteristics.

⁽¹⁾Analyzed by U.S. Environmental Protection Agency Method 1311/8260B.

⁽²⁾Washington State Dangerous Waste Maximum Concentration of Contaminants for the Toxicity Characteristic, Chapter 173-303-090 of the Washington Administrative Code.

Laboratory Note:

^BAnalyte detected in an associated Method Blank.

< = not detected at a concentration exceeding laboratory reporting limit

bgs = below ground surface

DCE = dichloroethylene

EDC = 1,2-dichloroethane

GeoEngineers = GeoEngineers, Inc.

MEK = methyl ethyl ketone

NE = not established

PCE = tetrachloroethylene

TCE = trichloroethylene



Table 12
Groundwater Analytical Results for Polycyclic Aromatic Hydrocarbons
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample Date	Sampled By	Laboratory	Analytical Results ⁽¹⁾ (micrograms per liter)																
				Acenaphthene	Acenaphthylene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(g,h,i)perylene	Pentachlorophenol	Benzo(a)anthracene TEF: 0.1	Chrysene TEF: 0.01	Benzo(a)pyrene TEF: 1	Benzo(b)fluoranthene TEF: 0.1	Benzo(k)fluoranthene TEF: 0.1	Indeno(1,2,3- Indeno(1,2,3- TEF: 0.1	Dibenz(e,h)anthracene TEF: 0.1	Total TEC ⁽²⁾
East-Adjoining Properties - 800 Roy Street Parcel																				
MW-7	06/20/02	Urban	F&BI	1.4	0.1	1.5	2.8	0.5	0.4	0.6	0.5	<0.3	0.1	0.1	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
MW-9	06/20/02	Urban	F&BI	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
MW-10	06/20/02	Urban	F&BI	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
MTCA Cleanup Level				960⁽³⁾	NE	640⁽³⁾	NE	4,800⁽³⁾	640⁽³⁾	480⁽³⁾	NE	0.22⁽⁴⁾	0.12⁽⁴⁾	12⁽⁴⁾	0.1⁽⁵⁾	0.12⁽⁴⁾	1.2⁽⁴⁾	0.12⁽⁴⁾	0.012⁽⁴⁾	0.1⁽⁵⁾⁽⁶⁾

NOTES:

⁽¹⁾Analyzed by U.S. Environmental Protection Agency Method 8270D.

⁽²⁾The concentration of each of the seven cPAHs listed in table 708-2 (under WAC 173-340-900) is multiplied by its corresponding TEF. The sum of these seven factors equal the total TEC. When the analytical result for any individual cPAH is reported as less than the LRL, half of the LRL is used as the concentrations for the calculation. When analytical results for all seven cPAHs are less than the LRL, the LRL for benzo(a)pyrene is reported as the TEC. The resultant total TEC concentration is then compared to the cleanup level for benzo(a)pyrene.

⁽³⁾CLARC, Groundwater, Method B, Non Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>. Revised May 2014.

⁽⁴⁾CLARC, Groundwater, Method B, Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>. Revised May 2014.

⁽⁵⁾MTCA Method A Cleanup Levels, Table 720-1, Section 900, Chapter 173-340 of WAC, revised November 2007.

⁽⁶⁾The cleanup level for cPAHs is based on direct contact using Equation 740-2 under WAC 173-340-740. When establishing and determining compliance with cleanup levels for mixtures of cPAHs, the mixture of cPAHs is considered a single hazardous substance. Benzo(a)pyrene's cleanup level is used as the cleanup level for the mixture.

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = cleanup levels and risk calculations

cPAH = carcinogenic polycyclic aromatic hydrocarbon

F&BI = Friedman & Bruya, Inc. of Seattle, Washington

LRL = laboratory reporting limit

MTCA = Washington State Model Toxics Control Act

NE = not established

PAH = polycyclic aromatic hydrocarbon

TEC = toxicity equivalent concentration

TEF = total equivalency factor

Urban = Urban Redevelopment LLC

WAC = Washington Administrative Code



Table 13
Sludge Sample Analytical Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sample Depth	Analytical Results ⁽¹⁾ (milligrams per kilogram)										
				Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1-DCE	Methylene Chloride
Sump 2	Sump 2	04/26/11	--	<0.03	12	<0.05	3.3	15	0.11	0.10	<0.05	<0.05	<0.05	<0.05
Sump 3	Sump 3	05/02/11	--	<0.03	0.074	<0.05	0.12	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05
Sump 4	Sump 4	04/26/11	--	<3	35	<5	17¹	85,000	520	410	<5	<5	<5	<5
	SUMP4_B_20110629	06/29/11	--	<0.3	<0.5	<0.5	<1.03	560	5.4	27	<0.5	<0.5	<0.5	<0.5
	SUMP4_C_20110629	06/29/11	--	<30	<50	<50	<150	24,000	140	170	<50	<50	<50	<50
Sump 5	Sump 5	05/04/12	--	0.60	4.6	1.6	2.6	1,200	180	880	12	31	2.6	<0.2
Cleanout 1	Cleanout 1 S-1/S-2 (composite)	04/26/11	--	<0.03	<0.05	<0.05	<0.15	5.5	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05
Cleanout 2	Clean out 2	05/02/11	--	0.38	6.0	1.7	11.9	2.6	0.14	1.0	<0.05	<0.05	<0.05	<0.05
Trench 1	01_Floor Trench	07/22/11	--	<0.03	<0.05	<0.05	<0.15	0.10	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05
MTCA Cleanup Level for Soil				0.03⁽²⁾	7⁽²⁾	6⁽²⁾	9⁽²⁾	0.05⁽²⁾	0.03⁽²⁾	160⁽³⁾	1,600⁽³⁾	0.67⁽⁴⁾	4,000⁽³⁾	0.02⁽²⁾
Dangerous Waste Criteria⁽⁵⁾				NE	NE	NE	NE	14	NE	NE	NE	NE	NE	NE
Universal Treatment Standard⁽⁶⁾				10	10	10	30	6	6	NE	30	6	6	30

NOTES:

RED indicates concentration exceeds the MTCA cleanup level for soil.

Chemical analyses conducted by Freidman & Bruya Inc., of Seattle, Washington.

¹Analyzed by U.S. Environmental Protection Agency Method 8260C.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

⁽³⁾CLARC, Soil, Method B, Non Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

⁽⁴⁾CLARC, Soil, Method B, Cancer, CLARC website - <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

⁽⁵⁾Washington State Dangerous Waste Maximum Concentration of Contaminants for the Toxicity Characteristic, Chapter 173-303-090 of WAC.

⁽⁶⁾Nonwastewater Standards, table titled "Universal Treatment Standards," Title 40, Part 268, Subpart D, of the Code of Federal Regulations.

Laboratory Note:

¹Estimated concentration.

< = not detected at a concentration exceeding laboratory reporting limit

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

MTCA = Washington State Model Toxics Control Act

NE = not established

PCE = tetrachloroethylene

TCE = trichloroethylene

WAC = Washington Administrative Code



Table 14
Process Water Analytical Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Analytical Results ⁽¹⁾ (micrograms per liter)											
			pH ⁽²⁾	Benzene	Toluene	Ethylbenzene	Total xylenes	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1-DCE	Methylene Chloride
Sump 4	SUMP4_A_20110629	06/29/11	--	<35	<100	<100	<300	20,000	450	47,000	<100	<20	<100	<500
Effluent 1	Effluent1_20120104	01/04/12	5.76	--	--	--	--	260	49	32	<1	0.37	<1	<5
Poly Tank	Polytank1_20120823	08/23/13	--	--	--	--	--	270	<1	<1	<1	<0.2 ^{PP}	<1	<5
	Tank-20130201	02/01/13	--	--	--	--	--	240	<1	<1	<1	<0.2	<1	<5
	Tank-20130205	02/05/13	--	--	--	--	--	5.3	<1	<1	<1	<0.2	<1	<5
King County Discharge Criteria			5.5<pH>12⁽³⁾	70⁽⁴⁾	1,400⁽⁴⁾	1,700⁽⁴⁾	2,200⁽⁴⁾	240⁽⁴⁾	500⁽⁴⁾	2,000⁽⁴⁾	2,000⁽⁴⁾	12⁽⁴⁾	3⁽⁴⁾	4,100⁽⁴⁾

NOTES:

Chemical analyses conducted by Freidman & Bruya Inc., of Seattle, Washington.

RED indicates concentration exceeds King County's Discharge Criteria.

⁽¹⁾ Analyzed by U.S. Environmental Protection Agency Method 8260C.

⁽²⁾ Analyzed by EPA Method 9040C.

⁽³⁾ King County Industrial Waste Local Discharge Permits, Daily Minimum and Maximum Limits for Corrosive Substances, Section 6.1.5 of PUT-13-1 (PR), Effective September 15, 2008.

⁽⁴⁾ King County Industrial Waste Discharge Screening Levels for Volatile Organic Compounds, September 22, 2009.

Laboratory Note:

^{PP}The sample was received with incorrect preservation. The value reported should be considered an estimate.

-- = not analyzed or not measured

< = not detected at a concentration exceeding the laboratory reporting limit

DCE = dichloroethylene

PCE = tetrachloroethylene

TCE = trichloroethylene

Table 15
2013 Remedial Investigation Boring and Well Details
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location ID	Located on a figure?	Location Type	Property	Description of Location	Purpose of Sample Location	Date(s) Advanced	Water-Bearing Zone	Groundwater Results?	Total Depth (feet bgs)	Total Well Depth (feet bgs)	TOC Elevation ⁽¹⁾ (in Feet)	Well Screen Depth (feet bgs)		Well Screen Elevation		Well Diameter	Drill Rig Type	Conductor Casing Depth (feet bgs)
												Top	Bottom	Top	Bottom			
MW101/B101	Y	Monitoring Well	Property	Central portion of the Property	To further evaluate the vertical extent of PCE contamination in soil and groundwater as previously encountered in boring P-07/well W-MW-03 and to assess the validity of the Windward data	07/10/12 07/11/12 07/12/12	Deep Outwash Aquifer	Y	140	115	39.49	105	115	-65.51	-75.51	2	Sonic	40 & 80
MW102/B102	Y	Monitoring Well	Valley Street ROW	In the southern sidewalk, north-adjacent the Property	To evaluate if PCE contamination extended off-Property to the north	07/17/12 through 07/23/12	Deep Outwash Aquifer	Y	125	125	49.19	115	125	-65.81	-75.81	2	Sonic	--
MW103/B103	Y	Monitoring Well	East Adjoining Property, Alley	Between 8th And 9th Avenues North, east of Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	07/25/12 07/26/12 07/27/12	Deep Outwash Aquifer	Y	115	114	35.92	103.5	113.5	-67.58	-77.58	2	Sonic	--
MW104/B104	Y	Monitoring Well	8th Avenue ROW	8th Avenue North ROW, east of Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property and to assess the validity of Windward Data	07/30/12 07/31/12 08/01/12	Deep Outwash Aquifer	Y	130	129	42.68	119	129	-76.32	-86.32	2	Sonic	--
MW105/B105	Y	Monitoring Well	Roy Street ROW	Roy Street ROW, southeast of the Property	To assess the vertical extent of PCE impacts in groundwater observed in well BB-8	08/06/12 through 08/10/12	Deep Outwash Aquifer	Y	140	140	44.69	130	140	-85.31	-95.31	2	Sonic	--
MW106/B106	Y	Monitoring Well	South-Adjoining Property	North portion of the south-adjointing property	To evaluate current groundwater conditions in the vicinity of former monitoring well R-MW4.	08/14/12 08/15/12	Deep Outwash Aquifer	Y	140	140	51.99	130	140	-78.01	-88.01	2	Sonic	--
MW107/B107	Y	Monitoring Well	8th Avenue ROW	8th Avenue North ROW, east of Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property and to assess the validity of Windward Data	12/03/12	Intermediate "A"	Y	45.5	45	43.82	35	45	8.82	-1.18	2	HSA	--
MW108/B108	Y	Monitoring Well	East-Adjoining Property, Alley	Alley east of 800 Roy Street Parcel	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/14/12	Intermediate "A"	Y	50.5	50	32.78	40	50	-7.22	-17.22	2	HSA	--
MW109/B109	Y	Monitoring Well	East-Adjoining Property, Alley	Alley east of 800 Roy Street Parcel	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/04/12	Intermediate "A"	Y	45.5	45	34.97	35	45	-0.03	-10.03	2	HSA	--
MW110/B110	Y	Monitoring Well	East-Adjoining Property, Alley	Alley east of 800 Roy Street Parcel	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/04/12	Intermediate "A"	Y	45.5	45	39.67	35	45	4.67	-5.33	2	HSA	--
MW111/B111	Y	Monitoring Well	East-Adjoining Property, Alley	Alley east of 800 Roy Street Parcel	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/05/12 12/06/12	Intermediate "B"	Y	80.5	80	36.48	70	80	-33.52	-43.52	2	HSA	50
MW112/B112	Y	Monitoring Well	Dexter Avenue North ROW	In ROW West of the Property	To evaluate if PCE contamination extended off-Property to the west	12/11/12 12/12/12	Intermediate "B"	Y	85.5	85	57.49	75	85	-17.51	-27.51	2	HSA	--
MW113/B113	Y	Monitoring Well	9th Avenue North ROW	9th Avenue North ROW, East of the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/18/12	Deep Outwash Aquifer	Y	80	80	32.94	70	80	-37.06	-47.06	2	HSA	--
MW114/B114	Y	Monitoring Well	Broad Street ROW	Broad Street ROW, South of the Property	To evaluate current groundwater conditions in the vicinity of former monitoring well R-MW4.	12/10/12	Intermediate "A"	Y	45.5	45	45.84	35	45	10.84	0.84	2	HSA	--
MW115/B115	Y	Monitoring Well	9th Avenue North ROW	9th Avenue North ROW, East of the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/13/12	Intermediate "A"	Y	46	45	34.14	35	45	-0.86	-10.86	2	HSA	--

Table 15
2013 Remedial Investigation Boring and Well Details
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Sample Location ID	Located on a figure?	Location Type	Property	Description of Location	Purpose of Sample Location	Date(s) Advanced	Water-Bearing Zone	Groundwater Results?	Total Depth (feet bgs)	Total Well Depth (feet bgs)	TOC Elevation ⁽¹⁾ (in Feet)	Well Screen Depth (feet bgs)		Well Screen Elevation		Well Diameter	Drill Rig Type	Conductor Casing Depth (feet bgs)
												Top	Bottom	Top	Bottom			
MW116/B116	Y	Monitoring Well	9th Avenue North ROW	9th Avenue North ROW, East of the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/07/12	Intermediate "A"	Y	46.5	45	31.36	35	45	-3.64	-13.64	2	HSA	--
MW117/B117	Y	Monitoring Well	Dexter Avenue North ROW	Eastern sidewalk of the Dexter Avenue ROW, south of the Property	To evaluate PCE impacts in groundwater inferred as hydrologically upgradient from the Property	02/04/13	Intermediate "A"	Y	55.5	55	56.90	40	55	16.90	1.90	2	HSA	--
MW118/B118	Y	Monitoring Well	Mercer Street ROW	Mercer Street ROW, south of the Property	To evaluate PCE impacts in groundwater inferred as hydrologically upgradient from the Property	03/21/13	Intermediate "A"	Y	55.5	50	52.91	40	50	12.91	2.91	2	HSA	--
MW119/B119	Y	Monitoring Well	9th Avenue North ROW	9th Avenue North ROW, southeast of the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	03/21/13	Intermediate "A"	Y	46	45	37.35	35	45	2.35	-7.65	2	HSA	--
MW120/B120	Y	Monitoring Well	8th Avenue ROW	8th Avenue ROW, northeast of the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/16/13	Intermediate "A"	Y	50.5	50	40	40	50	0.00	-10.00	2	HSA	--
MW121/B121	Y	Monitoring Well	8th Avenue ROW	In the east sidewalk of the 8th Avenue ROW east-adjacent to the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/16/13	Shallow	Y	26.5	25	41.72	15	25	26.72	16.72	2	HSA	--
MW122/B122	Y	Monitoring Well	East-Adjoining Property, Alley	Alley east of 800 Roy Street Parcel	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/17/13	Deep Outwash Aquifer	Y	115	115	30.03	105	115	-74.97	-84.97	2	HSA	--
MW123/B123	Y	Monitoring Well	Westlake Avenue North ROW	At the intersection of 9th Avenue and Westlake Avenue	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	12/18/13	Deep Outwash Aquifer	Y	80	80	27.51	70	80	-42.49	-52.49	2	HSA	--
MW124/B124	Y	Monitoring Well	Valley Street ROW	In the southern sidewalk, north-adjacent the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater crossgradient of the Property	12/19/13	Deep Outwash Aquifer	Y	120	120	56.24	110	120	-53.76	-63.76	2	HSA	--
MW125/B125	Y	Monitoring Well	Valley Street ROW	In the Valley Street ROW north-adjacent to the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater crossgradient of the Property	12/20/13	Shallow	Y	31.5	30	43.55	15	30	28.55	13.55	2	HSA	--
MW126/B126	Y	Monitoring Well	East-Adjoining Property, Alley	Alley east of 800 Roy Street Parcel	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater crossgradient of the Property	12/30/13	Intermediate "B"	Y	95	95	30.94	85	95	-54.06	-64.06	2	HSA	--
MW127/B127	Y	Monitoring Well	8th Avenue ROW	8th Avenue ROE northeast of the Property	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater crossgradient of the Property	12/31/13	Intermediate "A"	Y	50.5	50	39.04	40	50	-0.96	-10.96	2	HSA	--
MW128/B128	Y	Monitoring Well	Westlake Avenue North ROW	Southeast corner of the intersection of Westlake Avenue and Broad Street	To evaluate the lateral and vertical extents of PCE contamination in soil and groundwater downgradient of the Property	01/09/14	Deep Outwash Aquifer	Y	70.5	70		60	70			2	HSA	--
DB01	Y	Soil Boring	Property	Northwest portion of the Property	Delineate PCE contamination on the Property	03/18/13	Intermediate "A"	Y	41	--	--	--	--	--	--	--	HSA	--
DB02	Y	Soil Boring	Property	Northern portion of the Property	Delineate PCE contamination on the Property	03/18/13	Intermediate "A"	Y	45.5	--	--	--	--	--	--	--	HSA	--
DB03	Y	Soil Boring	Property	Northeast portion of the Property	Delineate PCE contamination on the Property	03/27/13	Intermediate "A"	Y	60.5	--	--	--	--	--	--	--	HSA	--
DB04	Y	Soil Boring	Property	Northwest portion of the Property	Delineate PCE contamination on the Property	03/21/13 03/24/13	Intermediate "A"	Y	60	--	--	--	--	--	--	--	HSA	--



Table 15
2013 Remedial Investigation Boring and Well Details
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location ID	Located on a figure?	Location Type	Property	Description of Location	Purpose of Sample Location	Date(s) Advanced	Water-Bearing Zone	Groundwater Results?	Total Depth (feet bgs)	Total Well Depth (feet bgs)	TOC Elevation ⁽¹⁾ (in Feet)	Well Screen Depth (feet bgs)		Well Screen Elevation		Well Diameter	Drill Rig Type	Conductor Casing Depth (feet bgs)
												Top	Bottom	Top	Bottom			
DB05	Y	Soil Boring	Property	Southwest portion of the Property	Delineate PCE contamination on the Property	03/26/13	Intermediate "B"	Y	70.5	--	--	--	--	--	--	--	HSA	--
DB06	Y	Soil Boring	Property	Southern portion of the Property	Delineate PCE contamination on the Property	03/25/13	Intermediate "B"	Y	80.5	--	--	--	--	--	--	--	HSA	--
DB07	Y	Soil Boring	Property	South-central portion of the Property	Delineate PCE contamination on the Property	03/27/13 03/28/13	Intermediate "B"	Y	90.5	--	--	--	--	--	--	--	HSA	--
DB08	Y	Soil Boring	Property	Southeast portion of the Property	Delineate PCE contamination on the Property	03/20/13 03/21/13	Intermediate "B"	Y	70.5	--	--	--	--	--	--	--	HSA	--
DB09	Y	Soil Boring	Property	Southeast portion of the Property	Delineate PCE contamination on the Property	03/19/13	Intermediate "B"	Y	70.5	--	--	--	--	--	--	--	HSA	--
DB10	Y	Soil Boring	Property	Western portion of the Property	Delineate PCE contamination on the Property	03/29/13 04/01/13	Intermediate "B"	Y	71.5	--	--	--	--	--	--	--	HSA	--
DB11	Y	Soil Boring	Property	Southwest corner of the Property	Delineate PCE contamination on the Property	04/02/13	Intermediate "A"	N	55	--	--	--	--	--	--	--	HSA	--
DB12	Y	Soil Boring	Property	North-central portion of the Property	Delineate PCE contamination on the Property	04/03/13	Intermediate "A"	Y	45.5	--	--	--	--	--	--	--	HSA	--
DB13	Y	Soil Boring	Property	Southwest portion of the Property	Delineate PCE contamination on the Property	04/03/13	Intermediate "A"	Y	45.5	--	--	--	--	--	--	--	HSA	--
DB14	Y	Soil Boring	Property	Northeast portion of the Property	Delineate PCE contamination on the Property	04/04/13	Intermediate "A"	Y	45.5	--	--	--	--	--	--	--	HSA	--
SV01	Y	Soil Gas Monitoring Point	8th Avenue ROW	Eastern sidewalk of the 8th Avenue North ROW, adjacent to 800 Roy Street Parcel	To evaluate if vapor intrusion from PCE-contaminated groundwater beneath the 800 Roy Street Parcel had impacted indoor air quality in the basement.	03/11/13	Shallow	N	12.25	--	--	--	--	--	--	--	Push Probe	--
SV02	Y	Soil Gas Monitoring Point	8th Avenue ROW	Eastern sidewalk of the 8th Avenue North ROW, adjacent to 800 Roy Street Parcel	To evaluate if vapor intrusion from PCE-contaminated groundwater beneath the 800 Roy Street Parcel had impacted indoor air quality in the basement.	03/11/13	Shallow	N	11.75	--	--	--	--	--	--	--	Push Probe	--
SV03	Y	Soil Gas Monitoring Point	8th Avenue ROW	Eastern sidewalk of the 8th Avenue North ROW, adjacent to 800 Roy Street Parcel	To evaluate if vapor intrusion from PCE-contaminated groundwater beneath the 800 Roy Street Parcel had impacted indoor air quality in the basement.	03/11/13	Shallow	N	12.75	--	--	--	--	--	--	--	Push Probe	--

NOTE:

⁽¹⁾TOCs were surveyed relative to an arbitrary benchmarks prior to 2012. TOCs were resurveyed by Bush, Roed & Hitchings, Inc. of Seattle, Washington, in February, October, and December 2012 and March 2013, using the North American Vertical Datum 1988.

-- = no data

bgs = below ground surface

HSA = hollow-stem auger

PCE = tetrachloroethylene

ROW = right-of-way

SoundEarth = SoundEarth Strategies, Inc.

TOC = top of casing

Windward = Windward Environmental LLC



Table 16
Soil Gas Analytical Results
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample Name	Sample Location	Sample Date	Analytical Results ⁽¹⁾ (micrograms per cubic meter)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
SV01	SV01-20130311	SV01	03/05/13	1.5	<0.16	0.31	<0.58	0.71
SV02	SV02-20130311	SV02	03/05/13	2.3	<0.17	<0.12	<0.61	<0.040
SV03	SV03-20130311	SV03	03/05/13	4.6	0.39	<0.12	<0.58	<0.037
MTCA Method B Soil Gas Screening Level⁽²⁾				96	3.7	NE	NE	2.8
MTCA Method B Indoor Air Cleanup Level⁽³⁾				9.6	0.37	NE	NE	0.28

NOTES:

Laboratory analyses conducted by Air Toxics Ltd. of Folsom, California.

⁽¹⁾ Analyzed by U.S. Environmental Protection Agency Method Modified TO-15 Low Level Analysis.

⁽²⁾ Calculated by dividing the indoor air cleanup level by an attenuation factor of 0.1, for soil gas just beneath a building, as specified in Table B-1, Ecology's Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State, October 2009.

⁽³⁾ MTCA Method B Indoor Air Cleanup Level, Carcinogen, CLARC database, September 2012.

< = not detected at a concentration exceeding laboratory reporting limit

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

MTCA = Washington State Model Toxics Control Act

NE = not established

PCE = tetrachloroethylene

TCE = trichloroethylene



Table 17
Summary of Groundwater Analytical Results - Natural Attenuation Parameters
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Well ID	Sample Date	Sampled By	Total Iron ⁽¹⁾ (mg/L)	Ferrous Iron ⁽²⁾ (mg/L)	Ferric Iron ⁽³⁾ (mg/L)	Total Manganese ⁽¹⁾ (mg/L)	Alkalinity ⁽⁴⁾ (mgCaCO ₃ /L)	Chloride ⁽⁵⁾ (mg/L)	Sulfate ⁽⁵⁾ (mg/L)	Nitrate ⁽⁵⁾ (mg/L)	Dissolved Methane ⁽⁶⁾ (mg/L)	Dissolved Ethene ⁽⁶⁾ (mg/L)	Dissolved Ethane ⁽⁶⁾ (mg/L)	pH ⁽⁷⁾	Specific Conductivity ⁽⁷⁾ (mS/cm)	Dissolved Oxygen ⁽⁷⁾ (mg/L)	ORP ⁽⁷⁾ (mV)
W-MW-02	12/16/13	SoundEarth	0.672	0.87	0	0.676	240	105	101	<0.025	0.00891	<0.00500	<0.00500	7.05	0.999	0.30	-84
MW103	12/18/13	SoundEarth	1.14	1.39	0	1.10	380	48.8	0.99	<0.025	0.0675	0.0135	0.00914	10.45	0.735	0.26	267.3
MW104	12/17/13	SoundEarth	5.45	5.03	0.42	0.757	310	28.9	23.1	<0.025	0.0254	<0.00500	<0.00500	8.49	0.591	0.48	244.9
MW105	12/29/13	SoundEarth	2.91	2.01	0.90	1.24	440	48.3	29.3	0.716	0.0445	0.00614	<0.00500	7.49	1.165	1.26	215.8
MW107	12/16/13	SoundEarth	1.35	0.43	0.92	0.358	340	70.8	165	<0.025	0.00869	<0.00500	<0.00500	6.62	0.90	1.14	22
MW108	12/17/13	SoundEarth	17.5	21.7	0	1.96	600	25.8	12.5	0.075	2.11	<0.00500	0.0228	6.36	1.57	0.50	-72
MW109	12/17/13	SoundEarth	12.6	16.2	0	4.04	670	16.1	34.6	<0.025	1.40	<0.00500	0.00589	6.68	1.54	0.31	-78
MW110	12/19/13	SoundEarth	0.079	0.04	0.04	3.28	390	20.4	158	0.603	0.00766	<0.00500	<0.00500	8.82	0.888	0.52	290.6
MW111	12/17/13	SoundEarth	0.168	0.18	0	0.135	170	47.3	4.73	<0.025	0.0147	<0.00500	<0.00500	7.58	0.498	1.19	-99
MW112	12/26/13	SoundEarth	0.560	0.23	0.33	0.106	160	12.3	44.9	0.064	<0.00500	<0.00500	<0.00500	7.79	0.378	2.58	222.9
MW113	12/19/13	SoundEarth	0.119	0.03	0.09	0.0248	96	23.5	17.4	0.280	<0.00500	<0.00500	<0.00500	10.00	0.267	0.26	263.5
MW114	12/18/13	SoundEarth	0.075	0.03	0.05	0.629	190	31.2	98.8	0.032	<0.00500	<0.00500	<0.00500	7.49	0.651	0.77	-8
MW115	12/19/13	SoundEarth	6.24	6.69	0	1.44	580	22.1	3.35	<0.025	2.55	<0.00500	<0.00500	6.80	1.22	0.71	-61
MW116	12/19/13	SoundEarth	2.48	2.65	0	1.14	310	26.2	14.5	<0.025	1.75	<0.00500	<0.00500	6.84	0.498	0.67	75
MW117	12/18/13	SoundEarth	1.49	2.03	0	0.344	200	9.11	56.3	<0.025	<0.00500	<0.00500	<0.00500	6.94	0.90	0.85	-38
MW119	12/19/13	SoundEarth	19.4	18.6	0.8	2.55	310	12.1	3.34	<0.025	3.45	<0.00500	<0.00500	9.56	0.579	0.34	295.0
MW120	12/19/13	SoundEarth	0.288	0.17	0.12	0.319	290	36.5	99.4	0.069	0.0101	<0.00500	<0.00500	6.63	0.743	1.30	-13
MW121	12/26/13	SoundEarth	2.39	1.90	0.49	6.47	790	18.6	200	<0.025	0.346	<0.00500	<0.00500	6.89	1.610	4.16	-29.6
MW124	12/26/13	SoundEarth	1.46	0.39	1.07	0.125	160	5.96	0.73	1.22	<0.00500	<0.00500	<0.00500	7.84	0.285	1.43	216.7
MW125	12/26/13	SoundEarth	2.39	1.47	0.92	1.85	650	112	12.8	0.076	0.455	<0.00500	0.00634	6.28	1.414	8.68	22.2
BB-8	12/29/13	SoundEarth	0.085	0.01	0.08	0.252	270	12.6	84.6	3.68	<0.00500	<0.00500	<0.00500	6.56	8.56	0.72	224.0
MW-9	12/16/13	SoundEarth	3.32	3.41	0	0.778	56	3.76	6.08	0.059	0.00624	<0.00500	<0.00500	6.72	0.132	0.20	262.5

NOTES:

Samples analyzed by Am Test, Inc., of Kirkland, Washington.

⁽¹⁾Analyzed by EPA Method 200.7.

⁽²⁾Analyzed by Method SM 3500FeD.

⁽³⁾Ferric iron = Total iron-Ferrous iron. If Total iron is less than ferrous, ferric is reported as 0.

⁽⁴⁾Analyzed by Method SM 2320B.

⁽⁵⁾Analyzed by EPA Method 300.0.

⁽⁶⁾Analyzed by EPA Method RSK-175.

⁽⁷⁾As reported on a YSI or similar water quality meter after three consecutive stabilized readings. The last stabilized parameter is reported.

< = not detected at concentration exceeding the laboratory reporting limit

mS/cm = milliSiemens per centimeter

EPA = U.S. Environmental Protection Agency

mg/L = milligrams per liter

mgCaCO₃/L= milligrams of calcium carbonate per liter

mV = millivolts

ORP = oxidation-reduction potential

SM = standard method

SoundEarth = SoundEarth Strategies, Inc.

TKN = total Kjeldahl nitrogen

Table 18
Surface Area, Volume, and Estimated Mass of Normalized PCE in Soil
within On-Property Treatment Area
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Elevation segment 0 to 10 feet below ground surface (40 to 30 feet mean sea level)						
Concentration Range ⁽¹⁾ (milligrams/kilogram)	Average PCE Concentration ⁽²⁾ (mg/kg)	Surface Area ⁽¹⁾ (square feet)	Volume ⁽³⁾ (cubic feet)	Soil Mass ⁽⁴⁾ (pounds)	PCE Mass ⁽⁵⁾ (pounds)	PCE Mass ⁽⁵⁾ (kilograms)
>100 (100 to 300)	200	1,000	10,000	1,259,000	252	114.2144656
90 to 100	95.0	1,695	16,950	2,134,005	203	91.95692162
30 to 40	35.0	0	0	0	0	0
20 to 30	25.0	0	0	0	0	0
10 to 20	15.0	2,899	28,990	3,649,841	55	24.83308018
1 to 10	4.50	6,169	61,690	7,766,771	35	15.85325336
0.5 to 1	0.750	15,500	155,000	19,514,500	15	6.638715813
0.05 to 0.5	0.275	5,064	50,640	6,375,576	2	0.795275324
<0.05 (0.00)	0.000	5,616	56,160	7,070,544	0	0
Totals		37,943	379,430	47,770,237	561	254

Elevation segment 10 to 20 feet below ground surface (30 to 20 feet mean sea level)						
Concentration Range ⁽¹⁾ (milligrams/kilogram)	Average PCE Concentration ⁽²⁾ (mg/kg)	Surface Area ⁽¹⁾ (square feet)	Volume ⁽³⁾ (cubic feet)	Soil Mass ⁽⁴⁾ (pounds)	PCE Mass ⁽⁵⁾ (pounds)	PCE Mass ⁽⁵⁾ (kilograms)
>100 (100 to 300)	200	2,200	22,000	2,769,800	554	251.2718243
90 to 100	95.0	1,700	17,000	2,140,300	203	92.22818097
30 to 40	35.0	1,900	19,000	2,392,100	84	37.97630981
20 to 30	25.0	4,500	45,000	5,665,500	142	64.2456369
10 to 20	15.0	5,414	54,140	6,816,226	102	46.37678376
1 to 10	4.50	10,186	101,860	12,824,174	58	26.1762423
0.5 to 1	0.750	4,008	40,080	5,046,072	4	1.716643418
0.05 to 0.5	0.275	5,572	55,720	7,015,148	2	0.875054128
<0.05 (0.00)	0.000	2,463	24,630	3,100,917	0	0
Totals		37,943	379,430	47,770,237	1,148	521

Elevation segment 20 to 30 feet below ground surface (20 to 10 feet mean sea level)						
Concentration Range ⁽¹⁾ (milligrams/kilogram)	Average PCE Concentration ⁽²⁾ (mg/kg)	Surface Area ⁽¹⁾ (square feet)	Volume ⁽³⁾ (cubic feet)	Soil Mass ⁽⁴⁾ (pounds)	PCE Mass ⁽⁵⁾ (pounds)	PCE Mass ⁽⁵⁾ (kilograms)
>100 (100 to 300)	200	1,600	16,000	2,014,400	403	182.743145
90 to 100	95.0	700	7,000	881,300	84	37.97630981
30 to 40	35.0	2,200	22,000	2,769,800	97	43.97256926
20 to 30	25.0	9,000	90,000	11,331,000	283	128.4912738
10 to 20	15.0	8,100	81,000	10,197,900	153	69.38528785
1 to 10	4.50	15,120	151,200	19,036,080	86	38.8557612
0.5 to 1	0.750	781	7,810	983,279	1	0.334505616
0.05 to 0.5	0.275	442	4,420	556,478	0	0.069413841
<0.05 (0.00)	0.000	0	0	0	0	0
Totals		37,943	379,430	47,770,237	1,106	502



Table 18
Surface Area, Volume, and Estimated Mass of Normalized PCE in Soil
within On-Property Treatment Area
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Elevation segment 30 to 40 feet below ground surface (10 to 0 feet mean sea level)						
Concentration Range ⁽¹⁾ (milligrams/kilogram)	Average PCE Concentration ⁽²⁾ (mg/kg)	Surface Area ⁽¹⁾ (square feet)	Volume ⁽³⁾ (cubic feet)	Soil Mass ⁽⁴⁾ (pounds)	PCE Mass ⁽⁵⁾ (pounds)	PCE Mass ⁽⁵⁾ (kilograms)
>100 (100 to 300)	200	900	9,000	1,133,100	227	102.793019
90 to 100	95.0	700	7,000	881,300	84	37.97630981
30 to 40	35.0	11,600	116,000	14,604,400	511	231.8553652
20 to 30	25.0	5,956	59,560	7,498,604	187	85.03266964
10 to 20	15.0	9,702	97,020	12,214,818	183	83.10815589
1 to 10	4.50	7,761	77,610	9,771,099	44	19.94441552
0.5 to 1	0.750	691	6,910	869,969	1	0.295958234
0.05 to 0.5	0.275	633	6,330	796,947	0	0.099409415
<0.05 (0.00)	0.000	0	0	0	0	0
Totals		37,943	379,430	47,770,237	1,237	561
Total PCE Mass in Soil (pounds)					4,052	1,838

NOTES:

CVOC = chlorinated volatile organic compound

mg/kg = milligrams per kilogram

PCE = tetrachloroethylene

⁽¹⁾Concentration range and surface areas correspond with Figures 44 through 47.

⁽²⁾Average concentration for concentration range. It is assumed that >100 milligrams per kilogram is between 100 and 300 mg/kg or 2 * 100 mg/kg.

⁽³⁾Volume = Surface Area * 10 foot elevation segment.

⁽⁴⁾Soil mass = volume * bulk soil density (125.9 pounds per cubic feet).

⁽⁵⁾PCE Mass (total CVOCs as PCE) = average PCE concentration as a percentage ((PCE in mg/kg)/10⁶) * soil mass.



Table 19
Surface Area, Volume, and Estimated Mass of Normalized PCE
in Groundwater within On-Property Treatment Area
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Elevation segment 10 to 40 feet below ground surface (30 to 0 feet mean sea level)						
Concentration Range ⁽¹⁾ (micrograms/liter)	Average PCE Concentration ⁽²⁾ (micrograms/liter)	Surface Area ⁽¹⁾ (square feet)	Volume ⁽³⁾ (cubic feet)	Groundwater Volume ⁽⁴⁾ (cubic feet)	Groundwater Mass ⁽⁵⁾ (pounds)	PCE Mass ⁽⁶⁾ (pounds)
>100,000 (100,000 to 300,000)	200,000	6,300	189,000	56,700	3,538,080	708
50,000 to 100,000	75,000	4,399	131,970	39,591	2,470,478	185
10,000 to 50,000	30,000	12,940	388,200	116,460	7,267,104	218
5,000 to 10,000	7,500	10,330	309,900	92,970	5,801,328	44
1,000 to 5,000	3,000	3,974	119,220	35,766	2,231,798	7
Totals		37,943	1,138,290	341,487	21,308,789	1,161
Total PCE Mass in Groundwater						1,161

NOTES:

µg/L = micrograms per liter

CVOC = chlorinated volatile organic compound

PCE = tetrachloroethylene

⁽¹⁾Concentration range and surface areas correspond with Figure 48.

⁽²⁾Average concentration for concentration range. It is assumed that >100,000 ug/L is between 100,000 and 300,000 µg/L or 2 * 100,000 µg/L, which is equal to the solubility limit of 200,000 µg/L for PCE.

⁽³⁾Volume = Surface Area * 10 foot elevation segment.

⁽⁴⁾Groundwater volume = volume * porosity (0.3).

⁽⁵⁾Groundwater mass = volume * water density (62.4 pounds per cubic feet).

⁽⁶⁾PCE Mass (total CVOCs as PCE) = average PCE concentration as a percentage ((PCE in ug/L)/10⁹) * groundwater mass.



Table 20
On-Property Performance Soil Analytical Results
for Chlorinated Volatile Organic Compounds
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Sampled By	Sample Depth (feet bgs)	Analytical Results ⁽¹⁾ (milligrams per kilogram)					
					PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE	Vinyl Chloride	1,1-DCE
P01	P01-05	02/12/14	SoundEarth	5	--	--	--	--	--	--
	P01-10	02/12/14	SoundEarth	10	--	--	--	--	--	--
P02	P02-05	02/12/14	SoundEarth	5	0.16	<0.03	<0.05	<0.05	<0.05	<0.05
	P02-07.5	02/12/14	SoundEarth	7.5	1.2	0.072	<0.05	<0.05	<0.05	<0.05
P03	P03-05	02/12/14	SoundEarth	5	0.36	<0.03	<0.05	<0.05	<0.05	<0.05
	P03-07.5	02/12/14	SoundEarth	7.5	0.061	<0.03	<0.05	<0.05	<0.05	<0.05
P04	P04-05	02/12/14	SoundEarth	7.5	0.55	<0.03	<0.05	<0.05	<0.05	<0.05
	P04-10	02/12/14	SoundEarth	10	<0.025	<0.03	<0.05	<0.05	<0.05	<0.05
P05	P05-05	02/12/14	SoundEarth	5	0.049	<0.03	<0.05	<0.05	<0.05	<0.05
	P05-07.5	02/12/14	SoundEarth	7.5	0.031	<0.03	<0.05	<0.05	<0.05	<0.05
P06	P06-07.5	02/12/14	SoundEarth	7.5	0.31	<0.03	<0.05	<0.05	<0.05	<0.05
	P06-10	02/12/14	SoundEarth	10	0.083	<0.03	<0.05	<0.05	<0.05	<0.05
MTCA Cleanup Level					0.05⁽²⁾	0.03⁽²⁾	160⁽³⁾	1,600⁽³⁾	0.67⁽⁴⁾	4,000⁽³⁾

NOTES:

Bold denotes concentration below laboratory detection limit, but exceeding the MTCA cleanup level for soil.

Red denotes concentrations exceeding MTCA Cleanup Level.

⁽¹⁾Analyzed by EPA Method 8260C.

⁽²⁾MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

⁽³⁾CLARC, Soil, Method B, Non Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>. Updated August 2015.

⁽⁴⁾CLARC, Soil, Method B, Cancer, CLARC website - <<https://fortress.wa.gov/ecy/clarc/CLARHome.aspx>>. Updated August 2015.

-- = not analyzed

< = not detected at a concentration exceeding laboratory reporting limit

bgs = below ground surface

CLARC = cleanup levels and risk calculations

DCE = dichloroethylene

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

PCE = tetrachloroethylene

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

APPENDIX A
PREVIOUS ENVIRONMENTAL INVESTIGATIONS



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1.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Between 1992 and 2013, several environmental investigations were conducted on the Site, which includes soil, soil vapor, and/or groundwater contaminated with gasoline-, diesel-, and oil-range petroleum hydrocarbons; tetrachloroethylene; trichloroethylene; vinyl chloride, and/or cis-1,2-dichloroethylene beneath the property and portions of the south- and east-adjoining properties, as well as beneath the 8th, 9th and Westlake Avenues North and Valley, Roy, and Broad Streets rights-of-way. The following is a summary of these investigations, while a more detailed discussion is provided in the RI Report (SoundEarth 2013a). All acronyms, figures, tables, and references in this appendix are located in the Cleanup Action Plan. Sample locations are presented in plan view on Figure 8. Soil and groundwater analytical results are presented in plan and cross-sectional views on Figures 9 and 10 and Figures 14 through 19, and in Tables 2 through 12. For evaluation purposes, those concentrations that exceed the current MTCA Method A or Method B cleanup levels for soil and groundwater are presented in bold red font in the tables. The remainder of this report includes references to cleanup levels; unless otherwise specified, these refer to the 2001 MTCA Method A or 2012 MTCA Method B Cleanup Levels for Unrestricted Land Use for soil and groundwater.

1.1 1992 ROUX PHASE I ENVIRONMENTAL SITE ASSESSMENT

Roux Associates, of Concord, California, conducted a Phase I Environmental Site Assessment (ESA) of the Property in 1992 (Roux 1992). The purpose of the Phase I ESA was to identify recognized environmental conditions (RECs) associated with the use, manufacture, storage, and/or disposal of hazardous or toxic substances at the properties in question. Roux identified the following RECs associated with the Property in 1992:

- The current (at that time) and historical storage of fuel in the yard area. Based on information provided by Maryatt Industries personnel, an extensive fuel release may have occurred before 1992.
- The current (at that time) and historical storage of heating oil in underground storage tanks (UST) beneath the Property. No integrity testing of the USTs had been performed since their installation in 1947.
- The current (at that time) and historical storage and use of solvents on the Property. Historical volume handling and disposal practices of the solvents were not revealed during the Phase I ESA. Solvent use at the time of the Phase I ESA was limited to approximately 10 gallons per month. Some solvents were disposed of through the wastewater treatment plant, while solvent-containing material was disposed of in a sludge disposal container to the north of the wastewater treatment area.
- The presence of potentially polychlorinated biphenyl (PCB)-containing transformers on the Property. An explosion occurred at one of the transformers. The Phase I ESA did not describe the location of the transformer nor did it indicate the source of the information.
- The storage of fuel in USTs beneath the 800 Roy Street parcel.
- An unknown volume of chemicals released on the north-adjoining property. The Seattle Fire Department responded to a chemical spill at the Esterline/Korry marine products facility. The type of chemical spilled was not revealed.

- The historical and/or current storage of fuel in the vicinity of the Property.

1.2 1992 ROUX PHASE II ENVIRONMENTAL SITE ASSESSMENT

Roux conducted a Phase II ESA at the Property in October 1992 (Roux 1993). Roux reportedly advanced a total of six borings to depths between 15 and 36.5 feet below grounds surface (bgs) and completed them as monitoring wells R-MW1 through R-MW6. Boring R-MW1 was advanced within the Property's yard area; boring R-MW2 was advanced near the 1960s-vintage fuel dispenser located in the northeastern portion of the Property; R-MW3 and R-MW6 were advanced along the eastern Property boundary; boring R-MW4 was advanced within the sidewalk to the north of the south-adjointing property; R-MW5 was advanced within the Dexter Avenue North right-of-way (ROW). Soil samples collected from the borings were submitted for analysis of chlorinated volatile organic compounds (CVOCs) including tetrachloroethylene (PCE), trichloroethylene (TCE), vinyl chloride, and trans-1,2-dichloroethylene (trans-1,2-DCE). Dalton, Olmsted & Fuglevand, Inc. (DOF) conducted a groundwater monitoring event in concert with Roux's groundwater sampling activities. Groundwater samples were collected from monitoring wells R-MW1 through R-MW6 by both consultants several days after drilling activities and submitted for analysis of CVOCs including PCE, TCE, vinyl chloride, trans-1,2-DCE, 1,1-dichloroethylene (1,1-DCE), and methylene chloride; gasoline-, diesel-, and oil-range petroleum hydrocarbons (GRPH; DRPH; ORPH;) and/or benzene, toluene, ethylbenzene, and total xylenes (BTEX).

Summary. The results of the Phase II ESA confirmed that the former storage of fuel on the Property and former use of the Property as a dry cleaning facility resulted in a release of solvents and petroleum hydrocarbons to soil and/or groundwater beneath the Property. Elevated concentrations of PCE were confirmed south and southeast of the Property boundaries.

Data Gaps. Because only some analytical data for the soil and groundwater samples collected during the Phase II ESA were available for review, it is not apparent whether any other chemicals were analyzed and, if so, whether the concentrations exceed the current (2001) cleanup levels. Neither soil nor groundwater contamination was bound vertically or horizontally.

1.3 1997 BLACK AND VEATCH PHASE II ENVIRONMENTAL SITE ASSESSMENT

Black & Veatch (B&V) conducted a Phase II ESA under contract with King County in association with the Denny Way/Lake Union CSO project (B&V 1998). The purpose of the Phase II ESA was to provide King County with geotechnical data to facilitate construction efforts and to evaluate if any properties located along the project corridor had impacted soil and/or groundwater beneath the project area. The project area was bound by Valley and Republican Streets to the north and south, respectively, and Nob Hill and Terry Avenues North to the west and east, respectively. Of the 56 borings advanced during the investigation, borings BB-5, BB-7, BB-8, BB-10, BB-12, BB-13, BB-14, TB-12, TB-18, and pumping wells PW-1 and PW-4 were located within the vicinity of the Property. Soil and groundwater samples were collected from all of the borings installed during the investigation and were analyzed for GRPH, DRPH, and ORPH. Select soil and groundwater samples were also analyzed for CVOCs, polycyclic aromatic hydrocarbons, and BTEX. However, only data indicating detectable concentrations of CVOCs, polycyclic aromatic hydrocarbons (PAH), and BTEX were summarized in the report. These detectable concentrations included groundwater collected from monitoring wells BB-5, BB-8, BB-10, BB-12, BB-13, and TB-18.

Summary. PCE and its degradation products were confirmed in groundwater samples collected from wells as far as 360 feet to the east of the Property; however, the source of the impacts was not confirmed.

Data Gaps. Neither soil nor groundwater contamination was bound vertically or horizontally. Analytical methods have since been modified.

1.4 2000 THERMORETEC UNDER-BUILDING SOIL AND GROUNDWATER TESTING

ThermoRetec conducted a subsurface investigation in June 2000 at the Property (ThermoRetec 2000). The purpose of the investigation was to evaluate the lateral extent of solvent-impacted soil and groundwater within the Property boundary. Nine borings were advanced on the Property (B-1 through B-3, B-4A, B-4B, B-4C, and B-5 through B-10). Groundwater was encountered at depths ranging from 8 to 14.5 feet bgs. Reconnaissance groundwater samples were collected from borings B-2 and B-6 through B-10 using a peristaltic pump. Select soil and reconnaissance groundwater samples were submitted for laboratory analysis of CVOCs, including PCE, TCE, vinyl chloride, cis- and trans-1,2-DCE, and chloroform.

Summary. The highest concentrations of solvents in soil were located in borings B-2, B-6, B-8, and B-9, located near the former dry cleaning machines; soil concentrations in this area exceeded the land ban criteria. The highest concentration of PCE in groundwater detected to date was encountered in the groundwater sample collected from boring B-9, at a concentration of 120,000 micrograms per liter ($\mu\text{g/L}$). The potential source of CVOCs previously detected in soil and groundwater samples collected from beneath the Property appeared to have been discovered.

Data Gaps. Because only some analytical data for the soil and groundwater samples collected during the ThermoRetec investigation were available for review, it is not apparent whether any other chemicals were analyzed and, if so, whether the concentrations exceed the current (2001) cleanup levels. Neither soil nor groundwater contamination was bound vertically or horizontally.

1.5 2001 GEOENGINEERS SUPPLEMENTAL REMEDIAL INVESTIGATION

GeoEngineers, Inc. (GeoEngineers) conducted a supplemental RI at the Property in July 2001 (GeoEngineers 2002). The purpose of the supplemental RI was to evaluate a potential source area of dry cleaning solvents; David Maryatt, of Maryatt Industries, indicated that one of the three dry cleaning machines in operation on the Property in the 1980s may have leaked dry cleaning solvents into the subsurface. Boring G-MW1 was advanced to an approximate maximum depth of 38 feet bgs in the vicinity of the former dry cleaning machines in order to evaluate the shallow groundwater beneath the Property. Boring G-MW2 was advanced in a relative downgradient location from the former dry cleaning machines to a maximum depth of approximately 18 feet bgs to evaluate a shallow-seated water-bearing zone. Boring G-SB4 was advanced further downgradient from the former dry cleaning machines adjacent to a floor drain, but was abandoned at approximately 18 feet bgs because of difficult drilling conditions. Boring G-MW-3 was advanced in the immediate vicinity of G-SB4 to an approximate depth of 38 feet bgs as a replacement boring location. Groundwater was encountered at two depths during drilling activities: a perched water-bearing zone at approximately 10 feet bgs and a deeper water-bearing zone at approximately 32 feet bgs. GeoEngineers collected groundwater samples from the perched water-bearing zone in all three newly installed monitoring wells using low-flow sampling techniques several days after drilling activities.

Select soil samples collected from borings G-MW1 and G-SB4 and groundwater samples collected from G-MW1, G-MW1, and G-MW3 were submitted for laboratory analysis of CVOCs, including PCE, TCE, vinyl chloride, 1,2-dichloroethane [EDC], cis-1,2-DCE, trans-1,2-DCE, and 1,3,5-trimethylbenzene; naphthalene; and BTEX by U.S. Environmental Protection Agency (EPA) Method 8260B. Soil samples with the highest detected concentrations of PCE were also submitted for analysis of Toxicity Characteristic Leaching Procedure (TCLP) by EPA Method 1311/8260B.

Summary. The results of the supplemental remedial investigation confirmed a source of the solvents identified in previous investigations. The highest concentrations of PCE were confirmed near the former dry cleaning machines; soil concentrations in this area exceeded the land ban criteria, and perched groundwater also contained elevated concentrations of PCE.

Data Gaps. Neither soil nor groundwater contamination was bound vertically or horizontally.

1.6 2004 AND 2009 DALTON, OLMSTED & FUGLEVAND, INC. GROUNDWATER SAMPLING

DOF conducted groundwater sampling events at the Property on December 10, 2004 (DOF 2004), and on January 29 and 30, 2009 (DOF 2009), in order to monitor the concentrations of CVOCs and petroleum hydrocarbons beneath the Site. On December 10, 2004, DOF sampled monitoring well G-MW3 (DOF 2004), and on January 29, 2009, DOF sampled on-Property wells G-MW1, G-MW2, R-MW1, R-MW2, R-MW3, R-MW5, and R-MW6 and off-Property monitoring wells BB-8 and BB-8A, which were installed between 1997 and 2009 during the Denny Way/Lake Union CSO project (DOF 2009). Monitoring well R-MW4, which was located to the south of the Property within the southern sidewalk of Roy Street, was decommissioned before the January 2009 groundwater sampling event. Groundwater samples were submitted for laboratory analysis of GRPH, BTEX, and CVOCs, including PCE, TCE, vinyl chloride, cis-1,2-DCE, trans-1,2-DCE, and 1,1-DCE.

Summary. The highest concentration of PCE in groundwater to date was encountered in the groundwater sample collected from monitoring well G-MW3 at a concentration of 220,000 µg/L.

Data Gaps. Groundwater impacts were not bound in any direction.

1.7 1992–2002 EAST-ADJOINING PROPERTIES SUBSURFACE INVESTIGATIONS AND REMEDIAL ACTIONS

Below is a summary of the subsurface investigations and remedial actions conducted on the east-adjointing properties.

1.7.1 800 Roy Street

In early 1992, the 800 Roy Street parcel owner, Seattle Parks and Recreation, notified Ecology of a leaking fuel pump dispenser associated with the 1955-vintage UST system. Fueling operations were suspended in October 1992. SCS Engineers conducted a vapor survey in the vicinity of the known and suspected USTs, as well as along the eastern parcel boundary to investigate if contamination beneath the parcel extended beyond the parcel boundaries (RETEC 1993). The results of the vapor survey indicated that a volatile organic compounds were present in the vicinity of the 550-gallon UST and 1955-vintage pump island and the 2,700-gallon UST. Vapor survey points located near the eastern parcel boundary did not exhibit elevated volatile organic compounds (VOC).

In March, June, September, and October 1993, E.P. Johnson removed the 2,700- and 550-gallon USTs and their associated product piping and excavated approximately 3,195 tons of petroleum-contaminated soil from the parcel (RETEC 1993; RETEC 1995). The excavation reached maximum depths between 7 and 25 feet bgs. Further exploration was inhibited vertically once the groundwater table was encountered within the excavation. Samples collected from stockpiled soil and from groundwater seepage within the excavation confirmed petroleum impacts to soil and groundwater beneath the parcel as a result of the former operation of refueling facilities. Soil samples collected from the sidewalls and bottoms of the final extents of the excavation were submitted for laboratory analysis of Resource Conservation and Recovery Act (RCRA) metals, including arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver; GRPH; DRPH; ORPH; BTEX; TCLP analysis; PCB total Aroclors; and/or CVOCs. The results of these analyses indicated that soil exhibiting concentrations of GRPH, BTEX constituents, and lead above their respective cleanup levels remained beneath the 800 Roy Street parcel and likely extended beneath the building, as well as off the parcel to the east and west. CVOCs were not detected in the soil samples analyzed. The excavated petroleum-contaminated soil was disposed of off the site for treatment and the excavation was backfilled with clean imported soil (RS-1 through RS-19 and RS-21 through RS-37).

Subsurface investigations were conducted by others in 1993 and 2002. The results of laboratory analyses of samples collected during these investigations indicated that soil and groundwater beneath the 800 Roy Street Parcel were impacted with petroleum-hydrocarbons, carcinogenic polycyclic aromatic hydrocarbons, metals, and CVOCs. CVOCs were not detected at concentrations above their laboratory reporting limits in any of the soil samples analyzed. Groundwater samples collected during these investigations from monitoring wells located in the vicinity of the 800 Roy Street parcel contained concentrations of GRPH and/or one or more BTEX constituents exceeding the applicable cleanup levels (monitoring wells MW-1 through MW-9, SCL-MW101, SCL-MW102, and MW105). The groundwater sample collected from monitoring well MW-2 in 1993 contained concentrations of PCE, TCE, cis-1,2-DCE, and vinyl chloride exceeding their respective cleanup levels (Table 1).

Summary. Petroleum hydrocarbon and CVOC impacts originating from the Property were confirmed in groundwater beneath the 8th Avenue North ROW, in the vicinity of the 800 Roy Street parcel.

Data Gaps. Discrete petroleum hydrocarbon soil and groundwater plumes originating from the Property and the 800 Roy Street parcel were not delineated. The extent of PCE and its degradation products in groundwater was not defined to the northeast of the Property. The locations of several soil and groundwater sampling locations could not be confirmed.

1.7.2 1992 753 9th Avenue North Parcel Investigations

Between June and September 1992, subsurface investigations and three UST removals were conducted at the 753 9th Avenue Parcel. In June 1992, Environmental Associates Inc. conducted a subsurface investigation at the parcel, which consisted of advancing borings to the east of the parcel within the Westlake Avenue North ROW and in the vicinity of three 1948-vintage USTs with capacities of 1,000, 300, and 675 gallons used to store gasoline, used oil, and heating oil, respectively, located to the west of the building within the asphalt-paved parking lot. A summary of the investigation was provided in a report by GeoTech Consultants Inc. (GeoTech 1992). The locations and depths of the borings were not provided in the summary. Soil and

groundwater samples were collected from the borings and analyzed for petroleum hydrocarbon identification (HCID). According to GeoTech's summary of the June 1992 investigation, none of the soil or groundwater samples collected from the borings contained concentrations of DRPH exceeding the 1989 MTCA Method A cleanup levels. GeoTech also indicated in their letter report that an investigation of the property to the north of the 753 9th Avenue North parcel was conducted and that the results of the investigation confirmed that groundwater in two wells located downgradient of the parcel and north of the building within the Aloha Street ROW had been impacted by petroleum hydrocarbons; the results of this investigation were not available for review.

In July and September 1992, GeoTech removed the three 1948-vintage USTs (GeoTech 1992) and conducted test pit investigations. Upon removal of the tanks, pinholes were observed in the USTs. Soils were excavated around each of the tanks at depths between 12 and 14 feet; soil samples collected from the bottoms of each excavation, and from the stockpiled soil, which did not appear to be contaminated, were submitted for laboratory analysis of BTEX and HCID or GRPH.

Summary. Soil beneath the 753 9th Avenue North parcel had confirmed petroleum impacts. Test pits advanced approximately along the western parcel boundary and in the northwest corner of the parcel confirmed petroleum contamination from approximately 4 feet to a depth of 12 to 14 feet bgs, indicating that the area of contamination extended throughout the parking lot behind the building an unknown distance, under the building, and off the parcel toward the west. Concentrations of GRPH and one or more BTEX constituents exceeding the cleanup level were detected in samples collected from the excavations from depths of 7 and 14 feet bgs. Petroleum impacts encountered in soil within the test pits advanced near the western property boundary were observed at depths above those of the USTs and from an upgradient location, indicating that the contamination was likely coming from a source west to southwest of the parcel. Groundwater impacts were confirmed downgradient of the parcel.

Data Gaps. Because the laboratory analytical results and locations and depths of the soil and groundwater samples from the June 1992 subsurface investigation were not available for review, it is not apparent whether additional chemicals, including CVOCs, were analyzed and if so, whether the concentrations exceed the current (2001) cleanup levels. Potential groundwater impacts resulting from the former operation of a dry cleaning facility and gasoline USTs at the Property were not evaluated on the 753 9th Avenue North parcel.

1.8 2008 CH2M HILL 9TH AVENUE SEWER UPGRADE ENVIRONMENTAL INVESTIGATION

CH2M Hill conducted an environmental investigation along the 9th Avenue North corridor between Republican and Aloha Street in April 2008 (CH2M HILL 2008). The purpose of the investigation was to evaluate if any soil and/or groundwater contamination was present and to manage it within the proposed sewer alignment activity area. Four soil borings were advanced within the 9th Avenue North ROW using hollow-stem auger methods to maximum depths of 7 to 26 feet bgs; boring CHB-07 was advanced northeast of the Property between Ward and Aloha Streets, boring CHB-08 was advanced to the east of the Property between Aloha and Roy Streets, boring CHB-09 was advanced to the southeast of the Property between Roy and Mercer Streets, and CHB-10 was advanced to the south-southeast of the Property between Mercer and Republican Streets. Reconnaissance groundwater samples were collected from borings CHB-07, CHB-08, and CHB-09 using a temporary well screen. Soil and groundwater samples were not collected from boring CHB-10 because the potential for contamination

in that boring location was considered low. Soil and reconnaissance groundwater samples collected from borings CHB-07, CHB-08, and CHB-09 were submitted for analysis of GRPH, DRPH, and CVOCs.

Summary. GRPH, DRPH, ORPH, BTEX, and CVOC concentrations in soil samples collected from borings CHB-07, CHB-08, and CHB-09 were below the applicable laboratory reporting limits and/or cleanup levels (Table 2). However, Concentrations of vinyl chloride and cis-1,2-DCE exceeding the applicable cleanup levels were detected in the reconnaissance groundwater sample collected from boring CHB-07. Therefore, groundwater beneath the 9th Avenue ROW was confirmed to have petroleum and CVOC impacts.

Data Gaps. The compliant CVOC concentrations encountered in soil and groundwater samples collected from boring CHB-08 indicated that the eastern boundary of the Site did not extend beyond the 9th Avenue North ROW between Aloha and Roy Streets. However, the exact locations of borings CHB-07, CHB-08, and CHB-09 were not presented in CH2M HILL's summary report, making the eastern Site boundary definition incomplete.

1.9 2010 AND 2011 SOUNDEARTH GROUNDWATER SAMPLING EVENTS

SoundEarth Strategies, Inc. (SoundEarth) collected groundwater samples from monitoring wells located at the Site on May 3, 2010, and June 2 and 3, 2011, using low flow purging methods. On May 3, 2010, SoundEarth collected groundwater samples from off-Property wells BB-8, BB-8A, BB-12, BB12A, and BB-13 and submitted them for laboratory analysis of PCE, TCE, vinyl chloride, cis- and trans-1,2-DCE, 1,1-DCE, and methylene chloride. On June 2 and 3, 2011, SoundEarth collected groundwater samples from on-Property wells G-MW1, G-MW2, G-MW3, R-MW1, R-MW2, R-MW3, R-MW5, and R-MW6, and off-Property wells BB-8 and BB-8A, as well as monitoring well MW-9, located across the 8th Avenue North ROW, near the 800 Roy Street parcel. The groundwater samples were submitted for analysis of GRPH, DRPH, ORPH, BTEX, and/or VOCs, including PCE, TCE, cis- and trans-1,2-DCE, 1,1-DCE, methylene chloride, 1,2-dibromoethane (EDB), EDC, naphthalene, 1,3,5- and 1,2,4-trimethylbenzene, and acetone.

Groundwater Results. PCE concentrations exceeding the cleanup levels were detected in groundwater samples collected from on-Property monitoring wells R-MW1, G-MW1, G-MW2, and G-MW3 and off-Property wells BB-8 and BB-8A. The PCE concentration of 33,000 µg/L detected in the groundwater sample collected from monitoring wells G-MW3, was reduced in concentration when compared to the maximum historical concentration of 220,000 µg/L (Table 1).

TCE, cis-1,2-DCE, and vinyl chloride concentrations exceeding the applicable cleanup levels were detected in groundwater samples collected from monitoring wells G-MW1, G-MW3, BB-8 and BB-8A. Concentrations of vinyl chloride were also detected in groundwater samples collected from monitoring wells R-MW1, R-MW6. The TCE, cis-1,2-DCE, and vinyl chloride concentrations in the groundwater sample collected from monitoring well G-MW2 were below the laboratory reporting limit of 1,000, 1,000, and 200 µg/L, respectively, due to the dilution of the sample, but it is reasonable to infer that the concentrations of TCE, cis-1,2-DCE, and vinyl chloride were above the cleanup level because of the concentration of PCE detected in the same groundwater sample and the historical presence of those analytes in groundwater collected from the well during previous sampling events (Table 1).

Concentrations of DRPH exceeding the cleanup level were detected in groundwater samples collected from monitoring wells R-MW1 and R-MW2. The groundwater sample collected from R-MW1 also contained a concentration of ORPH exceeding the cleanup level (Table 1).

Concentrations of GRPH exceeding the cleanup level were detected in groundwater samples collected from monitoring wells R-MW1, R-MW2, G-MW1, G-MW2, and G-MW3. A benzene concentration exceeding the cleanup level was also detected in the groundwater sample collected from R-MW2. Concentrations of benzene, ethylbenzene, and total xylenes remained below the applicable laboratory reporting limits in groundwater samples collected from monitoring wells G-MW2 and G-MW3; however, these samples were diluted due to the high concentrations of GRPH, therefore raising the detection limits of each of the analytes to a concentration greater than the applicable cleanup level (Table 1).

Concentrations of GRPH, DRPH, ORPH, BTEX, trans-1,2-DCE, 1,1-DCE, methylene chloride, EDB, EDC, naphthalene, 1,3,5- and 1,2,4-trimethylbenzene, and acetone in groundwater samples collected from off-Property wells remained below applicable laboratory reporting limits and/or cleanup levels. Groundwater samples collected from on-Property monitoring wells R-MW2, R-MW3 and R-MW5, and off-Property wells BB-12, BB-12A, and BB-13 did not contain concentrations of contaminants of concern exceeding applicable laboratory reporting limits and/or cleanup levels.

Summary. The results of the 2010 and 2011 groundwater sampling events indicated that although PCE and its degradation products were still present in groundwater beneath the Site, concentrations had slightly attenuated beneath portions of the Site since previous investigations.

Data Gaps. Groundwater contamination was not bound vertically or horizontally.

1.10 2012 WINDWARD ENVIRONMENTAL SUBSURFACE SOIL AND GROUNDWATER INVESTIGATIONS

In January and February 2012, Windward Environmental LLC (Windward) conducted a subsurface soil and groundwater investigation at the Site (Windward 2012). The purpose of the subsurface investigation was to further evaluate the lateral and vertical extent of contamination beneath the Property and to confirm if contaminated soil and groundwater extended off-Property to the east. Four soil borings were advanced during the investigation (borings P-03, P-06, P-07 and P-08) near the eastern Property boundary within the sidewalk of 8th Avenue North and near monitoring well R-MW1 in order to better evaluate the vertical extent of solvent contamination previously encountered in soil collected from R-MW1.

Reconnaissance groundwater samples were collected from borings P-06 and P-08 during drilling activities at stratified depths of 20, 40, and 60 feet bgs. After the reconnaissance groundwater samples were collected, borings P-03, P-06, P-07, and P-08 were completed as monitoring wells W-MW-01 through W-MW-04, respectively. Windward collected groundwater samples from on-Property monitoring wells G-MW1, G-MW2, G-MW3, R-MW1, R-MW2, R-MW3, R-MW5, R-MW6, and off-Property monitoring wells MW-9, BB-8, and BB-13.

The selected soil and reconnaissance and low-flow groundwater samples were submitted for laboratory analysis of VOCs, including PCE, TCE, vinyl chloride, EDC, 1,2-dichloroethane, cis- and trans-1,2-DCE, and 1,3,5- and 1,2,4-trimethylbenzene, as well as BTEX.

Soil Results. Fill was encountered in borings P-03, P-06, P-07, and P-08 from ground surface to maximum depths ranging from 15 to 23 feet bgs. Soil samples collected from all four borings contained concentrations of PCE and TCE exceeding the applicable cleanup levels. The PCE concentrations detected in the soil samples collected from borings P-03 at 31.5 to 32 feet bgs, P-06 at 30.5 to 31 feet

bgs, and P-7 at depths of 33.5 to 34, 43 to 43.5, and 53 to 53.5 feet bgs also exceeded Washington State dangerous waste criteria of 14 milligrams per kilogram (mg/kg). A concentration of vinyl chloride exceeding the cleanup level was detected in boring P-08 at a depth of 9 feet bgs. Soil samples collected from borings P-06, P-07, and P-08 at depths greater than 76 feet bgs did not exhibit concentrations of PCE, TCE, or other CVOCs exceeding the applicable cleanup levels. Concentrations of BTEX constituents, cis- and trans-1,2-DCE, and other CVOCs remained below applicable laboratory reporting limits and or cleanup levels.

Reconnaissance Groundwater Results. PCE, TCE, vinyl chloride, and cis-1,2-DCE concentrations exceeding the cleanup levels were detected in reconnaissance groundwater samples collected from P-06/W-MW-02 at stratified depths of 30 to 40 and 50 to 60 feet bgs and from P-08/W-MW-04 at stratified depths of 10 to 20, 30 to 40, and 50 to 60 feet bgs. Trans-1,2-DCE and 1,1-DCE were detected in several of the groundwater samples, but were below the applicable cleanup levels. BTEX concentrations remained below the applicable laboratory detection limits and/or cleanup levels in all of the reconnaissance groundwater samples; however, the laboratory detection limits for benzene were raised to above cleanup levels in the reconnaissance groundwater samples collected from W-MW-02.

Groundwater Results. Concentrations of PCE exceeding the cleanup level were detected in the groundwater samples collected from monitoring wells W-MW-01 through W-MW-04. Concentrations of cis-1,2-DCE and TCE exceeding their respective cleanup levels were detected in groundwater samples collected from monitoring wells W-WM-02, W-WM-03, and W-MW-04. BTEX concentrations remained below the applicable laboratory detection limits and cleanup levels in the groundwater samples; however, the laboratory detection limits for benzene were raised to above cleanup levels in the groundwater samples collected from W-MW-2 and W-MW-4.

Summary. Concentrations of PCE exceeding the cleanup level and dangerous waste criteria were confirmed to extend to the northeast of the suspected source area previously identified near boring G-SB4/G-MW3, indicating a separate probable source area near the vicinity of P-07/W-MW-03. Concentrations of PCE and/or its degradation products were confirmed at depths greater than those explored during previous investigations: from 40 to 82 feet bgs.

Data Gaps. The lateral and vertical extent of impacts in soil and groundwater remained undefined. In addition, SoundEarth questions the drilling methodology used by Windward with respect to the omission of conductor casing during the drilling event. Given the high concentrations of CVOCs observed approximately 30 to 40 feet bgs, likely present as dense nonaqueous-phase liquid, it is reasonable to suspect that contaminants could have been carried down through the borehole during drilling activities, thus biasing soil and groundwater samples collected below these depths.

1.11 2011 AND 2012 SOUNDEARTH PREFERRED PATHWAY INVESTIGATION

Between April 2011 and March 2012, SoundEarth completed a preferential pathway investigation for legal counsel representing the Property owner in support of an insurance claim coverage case. The purpose of the investigation was to evaluate potential pathways on Property that may have contributed to a release of PCE to the subsurface. This scope of work included an investigation of the configuration and integrity of the on-Property sanitary sewer system; sampling and analytical testing of water and sludge collected from the sewer line cleanouts, drains, and sumps; and collection and analytical testing of soil samples collected from the vicinity of the sewer line infrastructure.

In April 2011, SoundEarth subcontracted a plumbing company to video record the condition of accessible portions of the on-Property sanitary sewer lines prior to investigation activities. A portion of the northern sanitary sewer line appeared to be damaged.

Between April and June 2011, sludge samples were collected from floor Sumps No. 2 through Sump No. 5, located on the basement level and from one of the 1925-vintage water treatment drainage trenches located on the first floor of the building. Sludge samples were also collected from sewer line cleanouts C.O. No. 1 and C.O. No. 2, located in Building C (Figure 4). Sump No. 1 was dry and contained no residual fluid. Each sample was analyzed for VOCs by EPA Method 8260C. Additional stratified samples of water, sludge mixed with water, and sludge were collected from Sump No. 4 and submitted for laboratory analyses.

All of the sludge samples collected from Sump Nos. 2, 4, and 5 contained concentrations of PCE exceeding dangerous waste criteria. The sample collected from Sump No. 5 and three of the four samples collected from Sump No. 4 also exceeded Land Ban criteria. The sample from Sump No. 3 did not contain detectable concentrations of PCE. Sludge samples collected from sewer line cleanouts associated with the northern sewer line (C.O. No. 1 and C.O. No. 2) exhibited elevated concentrations of PCE (5.5 milligrams per kilogram and 2.6 mg/kg, respectively). C.O. No. 2 also contained detectable concentrations of BTEX constituents, TCE, and cis-1,2-DCE. The process water sample collected from Sump No. 4 contained elevated concentrations of PCE, TCE and cis-1,2-DCE. The PCE and cis-1,2-DCE concentrations exceeded King County's screening levels for VOCs (Tables 8 and 9). The water and sludge were removed from Sump No. 4 and disposed of off the Property as dangerous waste.

In July 2011, SoundEarth cleaned and saw cut a hole in the base of Sump No. 4 to assess its structural integrity and to evaluate whether or not the sump had leaked. A soil sample collected from approximately 1 foot below the base of the sump exhibited a PCE concentration of 19 mg/kg, which was considerably lower in concentration of PCE than found in the sludge samples within the sump (Table 3). The results of the structural assessment of the sump and soil sampling suggested that only minor leaking occurred.

In February 2012, SoundEarth excavated two test pits (designated as EX01 and EX02) along the southern sewer line alignment in the vicinity of Sump No. 2 (Figure 19). The purpose of this phase of work was to observe the conditions and structural integrity of the sewer line in the area of boring B-9, which exhibited elevated concentrations of PCE in shallow soil. Test pit EX01 exposed the 6-inch-diameter, cast iron sewer line. While the line appeared to sag slightly at the belled joint connections, no obvious perforations or breaks in the line were observed. Soil samples were collected from excavation EX01 and submitted for analytical testing for CVOCs by EPA Method 8260C. Soil samples collected from EX01 exhibited PCE concentrations of up to 190 mg/kg at a depth of 6 feet bgs. TCE concentrations between 0.052 and 0.38 mg/kg were also detected in the soil samples (Table 3). These results confirmed the presence of shallow PCE impacts adjacent to the southern sewer line.

Soil samples collected from test pit EX02 were screened in the field using a photoionization detector (PID), which did not reveal obvious soil impacts. No samples were analyzed from excavation EX02.

Summary. The results of the preferred pathway evaluation indicated that a portion of the PCE waste stream from Property dry cleaning was disposed of into Sump No. 4, which likely conveyed the PCE-impacted effluent through the southern sewer line. The results also suggest that Sump No. 4 did not

appear to leak significantly, though leakage may have occurred at joints within the sewer line. Sludge collected from cleanouts C.O. No. 1 and C.O. No. 2 and Sump No. 5 suggest that a portion of the PCE waste stream was conveyed through the northern sewer line as well. Excavated soils from Sump 4 and EX01 were drummed on site and disposed of as F002-listed dangerous waste.

Data Gaps. PCE in shallow soil was not bound laterally.

1.12 SUMMARY OF DATA GAPS

The results of previous investigations indicate that lateral and vertical extent of PCE-contaminated soil meeting Washington State’s dangerous waste criteria had not been defined. The lateral and vertical extent of PCE contamination in soil exceeding land ban criteria appeared to be limited to the west-central portion of the Property in the vicinity of borings B-9 and G-MW1 at depths between 4 and 20 feet bgs. The lateral and vertical extent of impacts off the Property to the north, south, east, and west were not delineated.

1.13 2013 INTERIM ACTION

On March 22, 2013, SoundEarth oversaw the removal of four 6,000-gallon USTs (Tank 1 through Tank 4) and a fifth 500- to 600-gallon UST, located near the center of the Property (Tank 5). Upon removing the concrete foundation in the vicinity of Tank 2, droplets of liquid mercury were discovered. The mercury was containerized and disposed of as hazardous waste to a regulated facility under the oversight of NRC Environmental Services. Tanks 1 through 4, which contained no measurable product, were cleaned by Marine Vacuum Services, Inc. Tanks 1 through 4 appeared to be in good condition upon removal, with no visible perforations or rust. Tank 5 was in poor condition, with numerous perforations; no material was contained within Tank 5. Soil samples were collected from the sidewalls and bottom of each UST excavation and were submitted for analysis of DRPH and ORPH by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Dx. The soil samples collected from the bottom of the Tank 2 excavation was also submitted for analysis of RCRA 8 metals, which included arsenic, barium, cadmium, chromium lead, mercury, selenium, and silver, by EPA Methods 200.8 and 1631E. Concentrations of DRPH, ORPH, and metals remained below their respective laboratory reporting limits and/or cleanup levels in all of the soil samples collected from the excavation limits. The tank excavations were backfilled with recycled concrete. A report summarizing the field activities and laboratory analytical results is provided in Appendix E of the Remedial Investigation Report (SoundEarth 2013a).



APPENDIX B
BORING LOGS


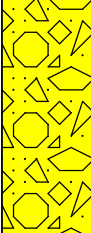









Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | B101
MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

 **Water Depth At Time of Drilling:** 21 feet bgs
 **Water Depth After Completion:** -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0						Concrete FILL		Concrete surfacing. Boring hand-cleared to 5 feet bgs. Brick and stone debris and concrete blocks with rebar.	
						SM (FILL)		Concrete debris with gravel and silt-sand mixture.	
5				0.0		SM (FILL)		Damp, loose, silty SAND with gravel, brown, no solvent or hydrocarbon odor (25-55-20). Fill material.	
				0.0		SM (FILL)		Wood debris with silty SAND, damp, brown, no solvent or hydrocarbon odor (25-75-0). Driller added water.	
10				0.0		Concrete (FILL)		Concrete debris. Wood debris.	
								No recovery.	
15									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount



Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.

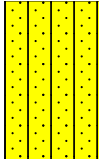

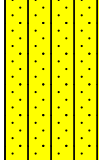

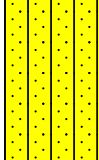



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Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

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 Seattle, Washington

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 Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15									
			20	0.2		SM		Wet, dense, silty fine to medium SAND with gravel, gray, no solvent or hydrocarbon odor (25-55-20).	
20				0.0		SM		Wet, dense, silty fine to medium SAND with gravel, gray, no solvent or hydrocarbon odor (25-55-20).	
25		10							
30				96.5		SM		Wet, dense, silty fine to medium SAND with gravel, gray, no solvent or hydrocarbon odor (20-65-15). Dry, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount



Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.

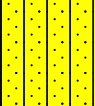

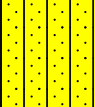

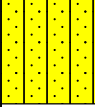



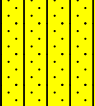









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BORING LOG | B101
MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

 **Water Depth At Time of Drilling:** 21 feet bgs
 **Water Depth After Completion:** -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30				219	B101-30	SM		Dry, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (sieve result 37.2/52.4/10.4).	
			100	61		SM		Damp, very dense, silty medium to fine SAND and gravel, brown, no solvent or hydrocarbon odor (sieve result 21.3/70/8.7).	
				93.4	B101-34	SP-SM		Damp, very dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (15-70-15).	
35				154		SM		Damp, very dense, silty fine SAND with gravel, gray with brown mottling, no solvent or hydrocarbon odor (20-65-15).	
				121					
			100	127		SM		Damp, very dense, silty fine SAND with gravel, brown with reddish brown mottling, no solvent or hydrocarbon odor (20-70-10).	
				60.9				Dry, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
40				42.1	B101-40			Dry, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
				29.8					
				57.6		SM-ML		Dry, very dense, SILT with fine sand and gravel, trace cobbles present, gray, no solvent or hydrocarbon odor (40-50-10).	
				12.6				Dry, very dense, SILT with fine sand and gravel, trace cobbles, gray, no solvent or hydrocarbon odor (40-45-15).	
				49.4					
45									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount



Notes/Comments:
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
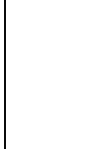



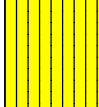






Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

 Water Depth At Time of Drilling: 21 feet bgs
 Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45				82.3		SM		Damp, very dense, silty medium SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
				56.9	B101-47	SP-SM		Moist, very dense, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
		100		53.5		SM		Moist, very dense, silty fine to medium SAND with gravel, gray, no solvent or hydrocarbon odor (sieve result 28.2/56.0/15.3).	
				13.8		SM		Damp, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
50				179		SM		Moist, very dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10).	
				141		ML		Dry, hard, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (60-25-15).	
				9.43		SM		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-70-5).	
55				9.10	B101-55	SM			
		100		8.79		SM-ML		Grades to dry to moist, more silt-rich, no solvent or hydrocarbon odor (40-50-10).	
				2.63					
				6.93					
60						SM-ML		Dry, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling: 21 feet bgs
Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60				59.5		SM		Dry, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (35-45-20).	
				1.3					
		100		4.2		SM		Dry, very dense, silty fine SAND and trace gravel, gray, no solvent or hydrocarbon odor (40-55-5).	
65				1.74	B101-65				
				7.4		SM		Wet, dense, silty fine SAND and gravel, gray, no solvent or hydrocarbon odor.	
			95	7.4					
				5.4		SM-ML		Damp, very dense, silty fine SAND and trace gravel, gray, no solvent or hydrocarbon odor (50-45-5).	
				2.5		SM		Dry, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
70				0.0		SM		Dry, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (40-55-5).	
				0.0		SM		Dry, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (40-55-5).	
		100		0.0		SM		Dry, very dense silty fine SAND, gray, no solvent or hydrocarbon odor (45-55-0).	
				0.0		SM		Damp, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (25-75-0).	
75				0.2	B101-75	SM			

Drilling Co./Driller: Major Drilling/Dan Drilling Equipment: LAR Sonic Sampler Type: Core Barrel Hammer Type/Weight: -- lbs Total Boring Depth: 140 feet bgs Total Well Depth: 115 feet bgs State Well ID No.: BCK 014	Well/Auger Diameter: 2/8,6,4 inches Well Screened Interval: 105 to 115 feet bgs Screen Slot Size: 0.010 inches Filter Pack Used: Colorado Silica Sand Surface Seal: Concrete Annular Seal: Bentonite grout Monument Type: Flush Mount	Notes/Comments: Set conductor casing at 40 and 80 feet bgs.
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Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling: 21 feet bgs
 Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75				0.0		SM-ML		Dry, very dense, SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (45-50-5).	
			100	0.0		SM		Moist, very dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-55-15).	
				0.0		SM		Dry, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (50-40-10).	
				0.2					
80				0.2	B101-81	SM		Wet, very dense, silty gravelly fine SAND and few cobbles, gray, no solvent or hydrocarbon odor (55-40-5).	
						SM		Moist, very dense, silty fine SAND and trace cobbles, gray, no solvent or hydrocarbon odor (40-55-5).	
				0.0					
85			100	0.0		SM-ML		Dry, very hard, silty gravelly fine to medium sandy SILT with some gravel, gray, no solvent or hydrocarbon odor (45-35-20).	
				0.0					
						SM		Damp, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
				1.1		SM		Moist, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
90									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount



Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.

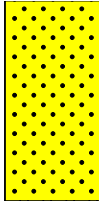
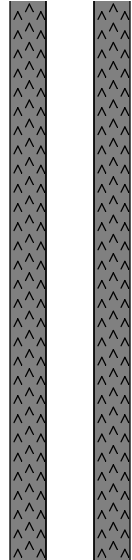
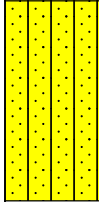
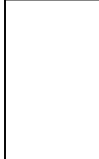
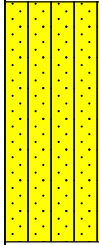
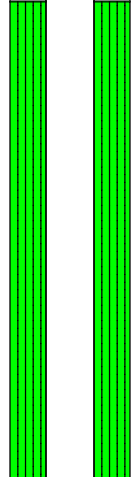
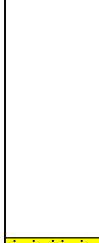

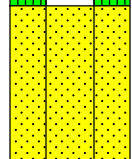




Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

 Water Depth At Time of Drilling: 21 feet bgs
 Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90				0.9		SP		Wet, dense, medium to fine SAND with trace silt, gray, no solvent or hydrocarbon odor (5-95-0).	
				0.1	B101-92				
				0.1		SM		Wet, dense, silty medium SAND, gray, no solvent or hydrocarbon odor (20-80-0).	
				0.1					
95		100	0.0			SP-SM		Wet, dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (15-85-0).	
				0.0	B101-97				
				0.0		SM		Damp, very dense silty fine to medium SAND, gray, no solvent or hydrocarbon odor (35-65-0).	
				0.0					
				0.1					
100			0.0			SP-SM		Wet, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (5-90-5).	
				0.0					
				0.0					
				0.0		SP-GP		Wet, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (sieve result 8.8/43.5/47.7).	
				0.0	B101-104				
				0.0		SP-SM		Wet, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
105			100						

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | B101
MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling: 21 feet bgs
 Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105				0.0		SM		Damp, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (35-60-5).	
				0.0		SP-SM		Moist, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
				0.0		SM		Damp, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (35-60-5).	
				0.1		SP-SM		Wet, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10).	
110				0.0		SP-SM		Wet, dense, coarse to medium SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-80-10).	
				0.0		SP-SM		Wet, dense, coarse to medium SAND and silt, gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).	
				6.6	B101-114.5	SM		Wet, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).	
115				0.1		SM		Damp, very dense silt, fine to medium SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
				0.1		SM		Damp, very dense, silty fine SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
				1.3		SM-ML		Dry, very dense, silty fine SAND with trace gravel, gray (50-45-5).	
				0.4					
				1.3		SM		Moist, very dense, silty coarse SAND with some gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
120									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount



Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.

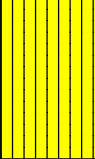
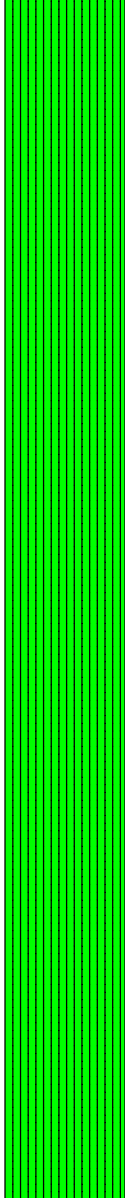

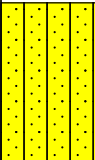




Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

 **Water Depth At Time of Drilling:** 21 feet bgs
 **Water Depth After Completion:** -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
120				0.4	B101-120	ML		Damp, hard, SILT with fine sand with some gravel, weakly cemented, gray, no solvent or hydrocarbon odor (50-35-15).	
				0.4			Sieve result 30.6/30.9/38.5.		
				0.7		SM-GM		Damp, very dense, silty fine to medium SAND with some gravel, gray, no solvent or hydrocarbon odor (35-50-15).	
125			50	1.0			No recovery.		
				2.5	B101-131	SM		Wet, very dense, silty fine SAND with trace gravel, cohesive, gray, no solvent or hydrocarbon odor (40-55-5).	
				1.3		SM-ML		Wet, hard, silty fine SAND with trace gravel, slurry consistency, gray, no solvent or hydrocarbon odor (60-35-5).	
				0.4				Wet, hard, silty fine to medium SAND with some gravel, cohesive material (45-40-15).	
130									
135									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount



Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.

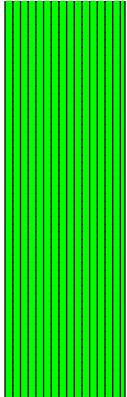


Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH; DMM
Date Started: 7/9/2012
Surface Conditions: Concrete
Well Location N/S: 10.8' north of the north wall of the warehouse area
Well Location E/W: 28.5' east of the east wall of the auto shop
Reviewed by: CCC
Date Completed: 7/17/2012

BORING LOG | **B101**
 MW101

Site Address: 700 Dexter Avenue North
 Seattle, Washington

 Water Depth At Time of Drilling: 21 feet bgs
 Water Depth After Completion: -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
135				0.0		SM-ML		Dry, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).	
				0.4		SM-ML		Dry, hard, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (45-45-10).	
				0.1		SM-ML			
140				0.7	B101-140	SM-ML		Dry, hard, SILT with fine sand and gravel, gray no solvent or hydrocarbon odor (40-45-15).	
								<p>Boring terminated at 140 feet bgs, backfilled with bentonite grout from 140 feet to 116 feet depth. Two-inch-diameter well installed to a depth of 115 feet bgs, screened from 105 to 115 feet bgs, with silica sand from 103 to 116 feet bgs, bentonite seal from 97 to 103 feet bgs, bentonite grout from 2 to 97 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW101.</p> <p>Reconnaissance groundwater samples collected from 5-foot sections of disposable pre-packed well screens set at depths of 75'-80', 95'-100', 115'-120', and 134'-139' depths.</p>	
145									
150									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 014

Well/Auger Diameter: 2/8,6,4 inches
Well Screened Interval: 105 to 115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:
 Set conductor casing at 40 and 80 feet bgs.



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0						Concrete		6 inches of concrete surfacing.	
						SM (FILL)		Damp, dense, silty fine SAND with gravel and brick fragments, brown, no solvent or hydrocarbon odor (25-65-10). Fill material.	
						SM (FILL)		Damp, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (26-65-10). Fill material.	
5						SM (FILL)		Moist, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10). Fill material.	
						SM (FILL)		Moist, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10). Fill material.	
						SM (FILL)		Damp, dense, silty fine SAND with gravel, asphalt and wood debris, brown, no solvent or hydrocarbon odor (20-70-10). Fill material.	
10				0.0		SM (FILL)		Damp, dense, silty fine SAND with gravel, trace asphalt and wood debris, brown, no solvent or hydrocarbon odor (20-70-10). Fill material.	
						SM (FILL)		Damp, dense, silty fine SAND with gravel, brown, no solvent or hydrocarbon odor (20-70-10). Fill material.	
			100	0.0		SP-SM (FILL)		Damp, dense, fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (15-75-10). Fill material.	
15				0.0		SM (FILL)		Damp, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-70-5).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8,6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15				0.0		SM (FILL)		Damp, dense, silty SAND with wood debris, brown, no solvent or hydrocarbon odor (25-75-0).	
				0.0		SM (FILL)		Damp, dense, silty SAND with wood debris, brown, no solvent or hydrocarbon odor (25-75-0).	
				0.0	B102-20	SM		Damp, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (20-75-5).	
20				0.0		SP-SM		Damp, very dense, fine to medium SAND with silt and gravel, grayish brown, no solvent or hydrocarbon odor (15-80-5).	
				0.0		SP-SM		Damp, very dense, fine to medium SAND with silt and gravel, grayish brown, no solvent or hydrocarbon odor (15-80-5).	
		100		0.0		SP-SM		Moist, very dense, fine to medium SAND with silt and gravel, brown, no solvent or hydrocarbon odor (15-80-5).	
25				0.0		SM-ML		Wet, very dense fine sandy SILT, brown, no solvent or hydrocarbon odor (50-50-0).	
				0.0	B102-30	SM-ML		Wet, very dense, fine sandy SILT, brown, no solvent or hydrocarbon odor (50-50-0).	
30									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8.6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30				0.0		SP		Damp, very dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (5-90-5).	
				0.0		SP		Damp, very dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (5-85-10).	
				0.0		SP		Wet, very dense, medium to fine SAND with gravel and silt, brown, no solvent or hydrocarbon odor (5-75-20).	
35			100	0.0		SP		Wet, very dense, medium to fine SAND with gravel and silt, brown, no solvent or hydrocarbon odor (5-75-20).	
				0.0	B102-38	SP		Wet, very dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (10-80-10).	
						SM-ML		Moist, hard, fine sandy SILT, brown, no solvent or hydrocarbon odor (50-50-0).	
40				1.1	B102-40	SM-ML		Damp, hard, fine sandy SILT, gray, no solvent or hydrocarbon odor (50-50-0).	
				0.6		SM-ML		Damp, hard, fine sandy SILT with gravel, cohesive, gray (40-50-10).	
				34.9					
				51.0		SM		Damp, very dense, silty fine SAND with gravel, cohesive, gray (40-50-10).	
45									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8.6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | B102
MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45						SM-ML		Moist, hard, fine sandy SILT, gray, no solvent or hydrocarbon odor (50-50-0).	
				147.5		SP-SM		Moist, very dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
				202					
				39.8	B102-49	SM-ML		Damp, very dense, silty fine SAND with gravel, cohesive, gray (40-50-10).	
50				42.9		SM-ML		Moist, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (40-50-10).	
			100	14.2		SM-ML		Dry, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (40-45-15).	
				73.7		SM-ML		Dry, very dense, silty fine SAND, gray no solvent or hydrocarbon odor (40-45-15).	
55						SM-ML		Dry, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (40-50-10).	
			100			SP-SM		Damp, very dense, fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
60					B102-60	SP-SM		Damp, very dense, fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8,6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60				134.7		SP-SM		Damp, very dense, fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
				116.0		SM-ML		Damp, very dense, silty fine SAND and gravel, cohesive, gray, no solvent or hydrocarbon odor (45-50-5).	
65			100	43.0		SM-ML		Damp, very dense, silty fine SAND and gravel, cohesive, gray, no solvent or hydrocarbon odor (45-50-5).	
				54.6		SM-ML		Damp, very dense, silty fine SAND, gray no solvent or hydrocarbon odor (50-50-0).	
70				42.0	B102-70	SM-ML		Damp, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (50-50-0).	
				24.9		SM-ML		Dry, very dense, silty fine SAND and gravel, gray, no solvent or hydrocarbon odor (45-50-5).	
						SM-ML		Dry, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-45-5).	
75						SM-ML		Dry, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-45-5).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8.6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75				0.0		SM-ML		Wet, very dense, SILT with fine sand, gray, no solvent or hydrocarbon odor (50-50-0).	
			100	0.0		SM-ML		Wet, very dense, SILT with fine sand, gray, no solvent or hydrocarbon odor (50-50-0).	
				1.5		SM-ML		Wet, very dense, SILT with fine sand, gray, no solvent or hydrocarbon odor (50-50-0).	
80				0.4	B102-80	SM-ML		Dry, very dense, SILT with fine sand, gray no solvent or hydrocarbon odor (50-50-0).	
				0.4		SM-ML		Dry, very dense, SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (50-45-5).	
				0.6		ML		Moist, very dense, SILT with fine sand, cohesive, gray, no solvent or hydrocarbon odor (60-35-5).	
85			100	0.6		SM-ML		Moist, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-45-5).	
				0.4		SM-ML		Moist, hard fine sandy SILT, gray, no solvent or hydrocarbon odor (60-40-0).	
				0.6		SM-ML		Moist, hard, fine sandy SILT, cohesive, gray, no solvent or hydrocarbon odor (60-40-0).	
90					B102-90				

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8.6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90			25	0.2		ML		Moist, very dense, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (55-40-5). Sampler plugged with a large rock; no recovery 92.5 to 100 feet bgs.	
95			25			SP-SM		No recovery. Material returned from approximately 95 to 100 feet bgs from previously stuck/dropped sampler: wet, medium to coarse, sand with silt and trace gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
100				0.9	B102-100	SP-SM		Moist, medium to coarse SAND with trace silt, gray, no solvent or hydrocarbon odor (5-95-0).	
105				1.1		SP-SM		Wet, coarse to medium SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
						SP-SM		Wet, coarse to medium SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (10-85-5).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8.6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105			100	0.9	B102-110	SP-SM		Wet, coarse to medium SAND with silt, gray, no solvent or hydrocarbon odor (15-85-0).	
				0.7		SP-SM		Wet, coarse to medium SAND with silt and trace gravel, gray no solvent or hydrocarbon odor (15-80-5).	
				0.7		SP-SM		Wet, coarse to medium SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (15-80-5). Siltier zones present (3 inches thick or less): wet, silty coarse to medium sand with gravel, gray, no solvent or hydrocarbon odor (20-75-5).	
110			50	1.6		SP-SM		Wet, dense, coarse to medium SAND with silt, gray, no solvent or hydrocarbon odor (15-80-5).	
				1.6		SP-SM		Wet, dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
				0.4		SP-SM		Wet, dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
115			100	0.4		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).	
				0.2		SP-SM		Wet, dense, medium to coarse SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-75-15).	
				0.2		SP-SM		Wet, dense, coarse to medium SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-70-20).	
120						B102-120			

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8.6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/17/2012
Surface Conditions: Concrete
Well Location N/S: 13.5' north of northern-most northeast corner of 700 Dexter
Well Location E/W: 10.0' east of northern-most northeast corner of 700 Dexter
Reviewed by: CCC
Date Completed: 7/24/2012

BORING LOG | **B102**
 MW102

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 28 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
120			100	0.4		SW-GW		Wet, dense, GRAVEL with sand and silt, gray, no solvent or hydrocarbon odor (10-55-35).	
			100	0.7		SM-GM		Damp, very dense, gravelly silty SAND, gray, no solvent or hydrocarbon odor (25-30-45).	
			100	0.4		SW-GW		Wet, dense, gravelly SAND with silt, gray, no solvent or hydrocarbon odor.	
				0.4		SW-GW		Wet, dense, gravelly SAND with silt, gray, no solvent or hydrocarbon odor (10-50-40).	
125								Boring terminated at 125 feet bgs. Two-inch-diameter well installed to a depth of 125 feet bgs, screened from 115 to 125 feet bgs, with silica sand from 113 to 125 feet bgs, bentonite seal from 103 to 113 feet bgs, bentonite grout from 5 to 103 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW102.	
130									
135									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 125 feet bgs
Total Well Depth: 125 feet bgs
State Well ID No.: BCK 015

Well/Auger Diameter: 1/8,6 inches
Well Screened Interval: 115 to 125 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silica sand
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | **B103**
 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0				0.6		Concrete		2 inches of concrete.	
				0.2		SM (FILL)		Damp, dense, silty SAND with gravel and wood debris, dark gray (30-60-10). Fill material.	
			50	0.0		FILL		Wood debris.	
						SM (FILL)		No recovery.	
5				0.0		SM (FILL)		Damp, dense, silty SAND with gravel and brick, metal, porcelain, and wood debris, dark brown to dark gray (30-60-10). Fill material.	
			100	0.2		SM (FILL)		Damp, dense, silty SAND with gravel and brick, metal, porcelain, and wood debris, dark brown to dark gray. No solvent or hydrocarbon odor (30-60-10). Fill material.	
				0.2		SM (FILL)		Damp, dense, silty SAND with gravel, wood and metal debris, dark brown, no solvent or hydrocarbon odor (30-60-10). Fill material.	
10				0.0	B103-10	SM (FILL)		Damp, dense, silty SAND with gravel and wood waste, dark brown, no solvent or hydrocarbon odor (30-60-10). Fill material.	
				0.4		SM (FILL)		Damp, dense, silty SAND with gravel and wood waste, dark brown, no solvent or hydrocarbon odor (30-60-10). Fill material.	
			100	0.7		SM (FILL)		Damp, dense, silty SAND with gravel and wood waste, dark brown, no solvent or hydrocarbon odor (30-60-10). Fill material.	
				0.4		SM (FILL)		Damp, dense, silty SAND with gravel and wood waste, dark brown, no solvent or hydrocarbon odor (30-60-10). Fill material.	
15				0.4		SM (FILL)		Damp, dense, silty SAND with gravel and wood waste, dark brown, no solvent or hydrocarbon odor (30-60-10). Fill material.	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | B103
MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15				1.1		SP		Damp, dense, fine to medium SAND with trace silt, gray, no solvent or hydrocarbon odor (5-95-0).	
			100	3.9					
				5.6	B103-18	SM		Moist, dense, silty SAND with gravel, gray, moderate hydrocarbon odor (15-65-20).	
				4.9		SM		Wet, dense, silty SAND with gravel, gray, moderate hydrocarbon odor (15-65-20).	
20				4.9		SM		Moist, dense, silty SAND with gravel, gray, slight hydrocarbon odor (15-65-20).	
			100	3.3					
				0.7		SM		Moist, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-60-5).	
				0.4					
25				0.0		SM		Wet, dense, silty SAND, gray, no solvent or hydrocarbon odor (30-70-0).	
			100	0.0		SM		Wet, dense, silty SAND, gray, no solvent of hydrocarbon odor (30-70-0).	
				0.0		SM-ML		Wet, loose, silt with fine SAND, gray, no solvent or hydrocarbon odor (55-45-0).	
				0.0		SM-ML		Wet, loose, silt with fine SAND, gray, no solvent or hydrocarbon odor (55-45-0).	
30									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | **B103**
 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30				0.0	B103-30	SM		Wet, loose, silty fine SAND with gravel and wood debris, gray, no solvent or hydrocarbon odor (25-60-15).	
			100	0.0					
				0.0		SM		Wet, loose, silty fine SAND with grave and wood debris, gray, no solvent or hydrocarbon odor (25-60-15).	
35				0.0		SP-SM		Wet, loose, fine to medium SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0					
				0.4		SP-SM		Wet, loose, fine to medium SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
40				0.0	B103-40	SP-SM		Moist, loose, fine to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
				6.1					
				9.2					
			100	5.6		SP-SM		Moist, loose, fine to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
				14.4		SP-SM		Moist, dense, fine to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
45									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | **B103**
 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45					B103-45	SM-ML		Damp, very dense, fine sandy SILT with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).	
			100	3.6					
				4.6					
				2.1					
				0.7		SM-ML		Damp, very dense, fine sandy SILT with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).	
50						SM-ML		Damp, very dense, fine sandy SILT with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).	
				0.0					
			100	2.6					
				0.0		SM-ML		Dry, very dense, fine sandy SILT with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).	
55					B103-55	SM-ML		Dry, very dense, SILT with fine sand with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).	
				0.5		SM-ML		Damp, very dense, silty gravelly SAND, dark gray, no solvent or hydrocarbon odor (35-35-30).	
			100	0.2		SM-ML		Damp, very dense, silty gravelly SAND, dark gray, no solvent or hydrocarbon odor (35-35-30).	
				0.0					
				0.2		SM-ML		Moist, very dense, silty gravelly SAND, dark gray, no solvent or hydrocarbon odor (35-35-30).	
60									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | **B103**
 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60				0.0	B103-62.5	GM		Damp, very dense, silty GRAVEL with fine sand, dark gray, no solvent or hydrocarbon odor (30-20-50).	
				0.0		GM		Damp, very dense, silty GRAVEL with fine sand, dark gray, no solvent or hydrocarbon odor (30-20-50).	
			100	0.0		SM-ML		Damp, very dense, fine sandy SILT with gravel, dark gray, no solvent or hydrocarbon odor (45-45-10).	
				0.0		SM-ML		Dry, very dense, silty gravelly SAND, dark gray, no solvent or hydrocarbon odor (35-35-30).	
65				0.0		SM-ML		Moist, very dense, fine sandy SILT with gravel, dark gray, no solvent or hydrocarbon odor (40-40-20).	
			100	0.0		SM-ML			
				0.0		SM-ML		Moist, very dense, fine sandy SILT to fine SAND with gravel, dark gray, no solvent or hydrocarbon odor (40-40-20).	
70				0.0		GM		Damp, very dense, silty GRAVEL with fine sand, dark gray, no solvent or hydrocarbon odor (30-20-50).	
				0.0	SM-ML		Damp, very dense, silty gravelly SAND, dark gray, no solvent or hydrocarbon odor (35-35-30).		
				0.0	SM-ML		Damp, very dense, silty gravelly SAND, dark gray, no solvent or hydrocarbon odor (35-35-30).		
75				0.0					

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | B103 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75					B103-75	GM		Moist, very dense, silty GRAVEL with fine sand, dark gray, no solvent or hydrocarbon odor (30-20-50).	
			100	0.0		GM		Dry, very dense, silty GRAVEL with fine sand, dark gray, no solvent or hydrocarbon odor (30-20-50).	
				0.0		GM		Moist, very dense, silty GRAVEL with fine sand, dark gray, no solvent or hydrocarbon odor (30-20-50).	
80				0.0		SM		Moist, very dense, silty medium to fine SAND with gravel, brown, no solvent or hydrocarbon odor (20-55-25).	
			100	0.0		SM		Moist, very dense, silty medium SAND with trace gravel, brown, no solvent or hydrocarbon odor (15-80-5).	
				1.0	B103-83	SM		Moist, very dense, silty medium SAND with trace gravel, brown, no solvent or hydrocarbon odor (15-80-5).	
				0.0		SP-SM		Wet, dense, medium to coarse SAND with little silt, brown, no solvent or hydrocarbon odor (10-90-0).	
85				0.0		SM		Moist, very dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20).	
			100	0.0		SM		Moist, very dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20).	
				0.7		SM		Moist, very dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20).	
				0.2		SM		Moist, very dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20).	
90									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | **B103**
 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90				0.0		SM		Damp, very dense, silty medium SAND with trace gravel, gray, no solvent or hydrocarbon odor (35-60-5).	
			100	0.0		SM		Moist, very dense, silty, medium to fine SAND, dark gray, no solvent or hydrocarbon odor (20-80-0).	
				0.0	B103-95	SM		Moist, very dense, silty medium to fine SAND, dark gray, no odor (20-80-0).	
95				0.0		SP-SM		Wet, dense, coarse to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-75-15).	
				0.2		SP-SM		Wet, dense, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-70-20).	
				0.0		SP-SM		Wet, dense, medium SAND with coarse to fine sand and silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
			100	0.2		SP-SM			
100				0.5		SP-SM		Wet, dense, medium SAND with fine to coarse sand with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
				0.5		SP-SM			
				0.5		SP-SM			
				0.0		SP-SM		Wet, dense, medium SAND with fine to coarse sand and silt and gravel, dark gray (10-80-10).	
105									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/25/2012
Surface Conditions: Concrete
Well Location N/S: 108.5' north of southeast corner of Seattle Light building
Well Location E/W: 6.6' east of southeast corner of Seattle Light building
Reviewed by: CCC
Date Completed: 7/27/2012

BORING LOG | **B103**
 MW103

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 19 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105				0.0	B103-105	SP-SM		Wet, dense, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-65-25).	
				0.0		SP-SM		Wet, dense, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-75-15).	
110			100	0.0		SP-SM		Wet, dense, coarse to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-65-25).	
				0.0	B103-113	SM		Damp, very dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (25-50-25).	
115								Boring terminated at 115 feet bgs. Two-inch-diameter well installed to a depth of 114 feet bgs, screened from 103.5 to 114 feet bgs, with sand from 101.5 to 115 feet bgs, bentonite seal from 91.5 to 101.5, bentonite grout from 5 to 91.5 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW103.	
120									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.: BCK 016

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 105 to 114 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado silicon sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0						Concrete		9 inches of concrete surfacing. Boring cleared with vector truck to a depth of 9 feet bgs.	
10				0.0	B104-10	SM		Damp, dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (15-65-20).	
15			100	0.0		SM		Damp, dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (15-65-20).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15				0.0		MH		Wet, soft, silty CLAY with sand and gravel and wood debris, consistency of wet grout, brownish gray, no solvent or hydrocarbon odor (60-20-20).	
			100	0.0		MH		Wet, soft, silty CLAY with sand and gravel and wood debris, consistency of wet grout, brownish gray, no solvent or hydrocarbon odor (60-20-20).	
				0.0					
20				0.0	B104-20	MH		Wet, soft, silty CLAY with sand and gravel, consistency of wet grout, gray, no solvent or hydrocarbon odor (60-20-20).	
				0.0		MH		Wet, soft, silty CLAY with sand and gravel, consistency of wet grout, gray, no solvent or hydrocarbon odor (60-30-10).	
				0.0					
				0.0		SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
25				0.0		SM		Wet, loose, silty fine SAND with clay and gravel and wood debris, gray, no solvent or hydrocarbon odor (35-55-10).	
			100	0.0					
				0.0					
				0.0		SM		Wet, loose, silty medium SAND with gravel, brown, no solvent or hydrocarbon odor (20-60-20).	
				0.0					
30									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30				0.0	B104-30	SM		Wet, loose, silty SAND with gravel, brown, no solvent or hydrocarbon odor (20-65-15).	
				0.5		SM		Moist, dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (20-70-10).	
				28.0		SM		Moist, dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
35				37.5		SM		Damp, dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
			100	3.6	B104-36	SM-ML		Dry, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-40-20).	
				0.0		SM-ML			
				0.2		SM-ML		Dry, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-40-20).	
40				0.5		SM-ML		Dry, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-45-15).	
				0.8		SM-ML			
			100	0.8		SM-ML		Dry, very dense, silty SAND with gravel, cohesive, gray, no odor (40-40-20).	
				1.4		SM-ML		Dry, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-40-20).	
45									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45				1.1		SM-ML		Moist, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-45-15).	
				0.8					
				0.8		SM-ML		Moist, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
				0.5		SM-ML		Dry, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-40-20).	
50				0.3	B104-50	SM		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (35-55-10).	
			100	0.6		SM		Moist to wet, dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-65-5).	
				0.3					
				0.0		SM		Damp, silty, fine SAND with gravel, gray, no solvent or hydrocarbon odor (35-60-5).	
55				2.1		SM		Wet, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (35-50-15).	
				2.1					
			100	0.9		SM		Wet, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (40-55-5).	
				2.7		SM-ML		Wet, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (45-50-5).	
60					B104-60				

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60			100	2.1		SM		Dry, very dense, silty fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-55-5).	
				1.8					
				0.6					
				0.6		SM-ML		Dry, very dense, SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-45-5).	
65			100	0.6					
				0.6					
				0.9		SM		Dry, very dense, silty fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-55-5).	
				1.3	B104-69				
70				0.6		SM		Dry, very dense, silty fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-50-10).	
				0.0					
				0.9		SM-ML		Dry, very dense, silty fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-50-5).	
				0.9					
75									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75			100	0.3	B104-80	SM-ML		Dry, very dense, silty SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (45-50-5).	
				0.3		SM		Damp, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (40-50-10).	
			0.0	SM				Damp, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (40-50-10).	
80			0.0				SM		
			100	0.0			SM-ML		
			100	0.0		SM-ML		Wet, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (45-50-5).	
			100	0.0		SM		Damp, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (40-50-10).	
			100	0.3		SM-ML		Dry, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (45-50-5).	
85			0.6	SM-ML					
			0.9				SM-ML		
			100	0.9	SM		Dry, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (40-50-10).		
			0.9	SM					
90				0.9	B104-90	SM		Dry, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (40-50-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90				0.9		SM		Damp, very dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (40-50-10).	
			100	1.2		SM		Damp, very dense, silty medium to fine SAND with gravel, cohesive, dark gray (30-60-10).	
				0.0		SM		Damp, very dense, silty medium to fine SAND with trace gravel, dark gray, no solvent or hydrocarbon odor (30-65-5).	
				0.6		SM		Damp, very dense, silty medium to fine SAND, cohesive, dark gray (30-70-0).	
95				0.0		SM		Wet, dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-55-15).	
			100	0.0		SM		Wet, dense, silty medium to fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (25-65-10).	
				0.0		SM		Wet, dense, silty coarse to fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (30-60-10).	
				0.0		SP-SM		Wet, dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0	B104-100	SM		Moist, dense, silty fine SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (30-65-5).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
			100	0.3		SP-SM		Wet, dense, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
				0.3		SP-SM		Wet, dense, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-65-25).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-65-25).	
105									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 7/30/2012
Surface Conditions: Concrete
Well Location N/S: 69.7' south of most easterly NE corner of 700 Dexter
Well Location E/W: 16.7' east of the most easterly NE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 8/2/2012

BORING LOG | **B104**
 MW104

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 17 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
120						SP-SM		Wet, dense, coarse to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-75-15).	
						SP-SM		Wet, dense, coarse to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-70-20).	
125						SP-SM		Wet, dense, coarse to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-70-20).	
						SP-SM		Wet, dense, coarse to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-70-20).	
						ML		Dry, very dense, silt with fine SAND and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-25-25).	
130					B104-130	ML		Dry, very dense, silt with fine SAND and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-25-25).	
135								<p>Boring terminated at 130 feet bgs. Two-inch diameter well installed to a depth of 129 feet bgs, screened from 119 to 129 feet bgs, with silica sand from 117 to 130 feet bgs, bentonite seal from 107 to 117 feet bgs, bentonite grout from 5 to 107 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW104.</p>	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 130 feet bgs
Total Well Depth: 129 feet bgs
State Well ID No.: BCK 017

Well/Auger Diameter: 2/10,8,6 inches
Well Screened Interval: 119 to 129 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0						Concrete		Concrete and brick surfacing.	
			80			SM (FILL)		Damp, dense, silty fine SAND with gravel, brown, no solvent or hydrocarbon odor (25-60-15). Fill material.	
						SM (FILL)		Damp, dense, silty fine SAND with gravel, brown, no solvent or hydrocarbon odor (25-60-15).	
5				0.1		SM (FILL)		Damp, dense, silty fine SAND with gravel, brown, no solvent or hydrocarbon odor (25-60-15).	
				0.0		SM (FILL)		Damp, dense, silty SAND with gravel, asphalt debris, black, no solvent or hydrocarbon odor (25-60-15). Fill material.	
			100			SM (FILL)		Damp, dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (25-70-5).	
				0.1		SM (FILL)		Damp, loose, silty SAND with gravel, brown, no solvent or hydrocarbon odor (15-80-5). Fill material.	
10				0.0	B105-10	SM (FILL)		Damp, loose, silty SAND with gravel, brown, no solvent or hydrocarbon odor (15-80-5). Fill material.	
				0		SM (FILL)		Damp, dense, SILT with gravel, dark brown, no solvent or hydrocarbon odor (25-60-15). Fill material.	
			100			SM (FILL)		Damp, dense, silty SAND with gravel, dark brown, no solvent or hydrocarbon odor (25-60-15). Brick.	
				0.0		SM-SP (FILL)		Damp, dense, medium fine SAND with silt, reddish brown, no solvent or hydrocarbon odor (10-80-10). Fill material.	
15				0.0		SM-SP (FILL)		Damp, dense, medium fine SAND with silt and gravel, reddish brown, no solvent or hydrocarbon odor (10-80-10). Fill material.	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15				0.0		SM		Damp, dense, silty SAND with gravel, trace cobbles, brown, no solvent or hydrocarbon odor (25-65-10).	
			100	0.0		SM		Damp, dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (25-65-10).	
				0.0		SM-SP		Damp, dense, medium fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (15-70-15).	
				0.0		SM-SP		Damp, dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (15-70-15).	
20				0.0	B105-20	SM		Wet, loose, silty SAND with gravel, grayish brown, no solvent or hydrocarbon odor (20-70-10).	
			100	0.0		SM		Wet, loose, silty SAND with gravel, grayish brown, no solvent or hydrocarbon odor (20-70-10).	
				0.0		SP-SM		Moist, loose, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (10-80-10).	
				0.0		SP-SM		Moist, loose, medium to fine SAND with gravel and silt, brown, no solvent or hydrocarbon odor (10-80-10).	
25				0.1		SM		Dry, very dense, silty fine SAND with gravel, grayish brown, cohesive, no solvent or hydrocarbon odor (25-60-15).	
			100	1.1		SM		Dry, very dense, silty fine SAND with gravel, grayish brown, cohesive, no solvent or hydrocarbon odor (25-60-15).	
				1.1		SM		Dry, very dense, silty fine SAND with gravel, grayish brown, cohesive, no solvent or hydrocarbon odor (35-45-20).	
30				2.7		SM		Dry, very dense, silty fine SAND with gravel, grayish brown, cohesive, no solvent or hydrocarbon odor (35-45-20).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30				0.0	B105-30	SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (25-70-5).	
			100	0.5		SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (25-70-5).	
				0.1		SM		Moist, very loose, silty SAND with gravel, cohesive gray, no solvent or hydrocarbon odor (30-55-15).	
				1.2		SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-55-10).	
35				0.0		SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (25-75-5).	
			50	0.0		SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
40				0.0	B105-40	SM		Moist, very dense, silty SAND with gravel and cobbles, gray, no solvent or hydrocarbon odor (35-60-5).	
				0.0		SM		Moist, very dense, silty SAND with gravel and cobbles, gray, no solvent or hydrocarbon odor (35-60-5).	
			50	2.2				No recovery.	
45									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45				0.0		SM-ML		Moist, very dense, silty SAND with gravel, gray, cobbles, no solvent or hydrocarbon odor (40-40-20).	
			90	0.0		SM		Damp, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor (20-60-20).	
				0.0		SM		Damp, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor (20-60-20).	
50				0.0	B105-50	SM		Wet, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-50-15).	
			50	0.3		SM		Wet, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-50-15).	
								No recovery.	
55				0.3		SM		Damp, very dense, silty SAND with gravel, dark gray, cohesive, no solvent or hydrocarbon odor (35-45-20).	
			100	0.7		SM		Damp, very dense, silty SAND with gravel, dark gray, cohesive, no solvent or hydrocarbon odor (35-45-20).	
				0.7		SM		Damp, very dense, silty SAND with gravel, dark gray, cohesive, no solvent or hydrocarbon odor (35-45-20).	
60				0.0		SM		Damp, very dense, silty SAND with gravel, dark gray, cohesive, no solvent or hydrocarbon odor (35-45-20).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:

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Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60				0.3	B105-60	SP		Damp, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (5-90-5).	
			100	0.3		SM		Damp, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor (35-50-15).	
				0.3		ML		Dry, hard, SILT with fine sand and gravel, cohesive, dark gray, no solvent or hydrocarbon odor (55-35-10).	
				0.3		ML		Dry, hard, SILT with fine sand and gravel, cohesive, very gray, no solvent or hydrocarbon odor (55-35-10).	
65				0.0		ML		Dry, hard, SILT with fine sand and gravel, cohesive, dark gray, no solvent or hydrocarbon odor (50-40-10).	
			100	0.0		ML		Dry, hard, SILT with fine sand and gravel, cohesive, dark gray, no solvent or hydrocarbon odor (50-40-10).	
				0.0		ML		Dry, hard, SILT with fine sand and gravel, cohesive, dark gray, no solvent or hydrocarbon odor (50-40-10).	
				0.0		GM		Damp, very dense, silty GRAVEL with sand, cohesive, dark gray, no solvent or hydrocarbon odor (35-25-40).	
70				0.0		GM		Damp, very dense, silty gravelly SAND, cohesive, dark gray, no solvent or hydrocarbon odor (35-25-40).	
			--	0.0		GM		Damp, very dense, silty gravelly SAND, cohesive, dark gray, no solvent or hydrocarbon odor (35-25-40).	
75				0.0					

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:

 Page: | **5 of 10**



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75				0.3		SM		Moist, very dense, silty SAND with gravel, cohesive, grayish brown, no solvent or hydrocarbon odor (35-50-15).	
			100	0.3		SM		Moist, very dense, silty SAND with gravel, cohesive, grayish brown, no solvent or hydrocarbon odor (35-50-15).	
				0.3		SM		Moist, very dense, silty SAND with gravel, cohesive, grayish brown, no solvent or hydrocarbon odor (35-50-15).	
				0.3	B105-80	SM		Moist, very dense, silty SAND with gravel, cohesive, grayish brown, no solvent or hydrocarbon odor (35-50-15).	
80								Bentonite plug.	
			50			SM		Damp, very dense, silty SAND with gravel, cohesive, dark gray, no solvent or hydrocarbon odor (35-50-15).	
				0.1					
				0.1					
85				0.0		GM		Wet, very dense, gravelly, silty SAND, gray, no solvent or hydrocarbon odor (35-30-40).	
			100	0.0		GM			
				0.0					
				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (35-45-20).	
90									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:

 Page: 6 of 10



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90				0.0	B105-90	GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-30-40).	
			100	0.0		GM		Wet, very dark, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-30-40).	
				0.0		SM		Damp, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor (35-50-15).	
				0.0		SM		Moist, very dense, silty medium to fine SAND and gravel, dark gray, no solvent or hydrocarbon odor (20-75-5).	
95				0.0		SP-SM		Wet, loose, medium to fine SAND with silt and gravel, dark brown, no solvent or hydrocarbon odor (10-85-5).	
			100	0.0					
				0.0					
				0.0					
				0.0					
100				0.0	B105-100	SP-SM		Wet, loose, medium to fine SAND with silt, brown, no solvent or hydrocarbon odor (10-90-0).	
				0.0					
			100	0.0		SP-SM		Wet, loose, fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0					
				0.0					
105				0.0					

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105				105.5		SP-SM		Wet, loose, fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP-SM		Wet, loose, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, loose, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
110				0.0	B105-110	SP-SM		Wet, loose, coarse to medium SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-60-30).	
			100			SP-SM		Wet, loose, coarse to medium SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-60-30).	
						SP-SM		Wet, loose, coarse to medium SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-60-30).	
115						SP-SM		Wet, loose, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
120									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
120			100	0.0	B105-120	SP-SM		Wet, loose, coarse to medium SAND with gravel, dark gray, no solvent or hydrocarbon odor (10-65-25).	
				0.0		SP-SM		Wet, loose, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-65-25).	
				0.0		SM		Damp, very dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (20-55-25).	
				0.0		SM		Damp, very dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (20-55-25).	
125			--			SP-SM		Wet, loose, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-70-20).	
						SP-SM		Wet, very dense, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-60-30).	
						SP-SM		Wet, loose, medium to coarse SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
						SP-SM		Wet, loose, medium to coarse SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
130				0.0	B105-130	SP-SM		We, loose, medium to coarse SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
			100	0.0		SP-SM		Wet, loose, medium to coarse SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
135				0.0		SP-SM		Wet, loose, medium to coarse SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-70-20).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/13/12
Surface Conditions: Concrete
Well Location N/S: 36.2' south of SE corner of 700 Dexter property
Well Location E/W: 79.3' east of SE corner of 700 Dexter property
Reviewed by: CCC
Date Completed: 8/13/12

BORING LOG | **B105**
 MW105

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 21 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
135			100	0.0	B105-138	SP-SM		Wet, loose, coarse to medium SAND with gravel and silt, gray no solvent or hydrocarbon odor (10-70-20).	
			0.0	SP-SM			Wet, loose, coarse to medium SAND with gravel and silt, gray, no solvent or hydrocarbon odor (10-70-20).		
			0.0	ML			Dry, hard, SILT with fine sand and gravel, brown, no solvent or hydrocarbon odor (70-20-5).		
			0.0	ML			Dry, hard, SILT with fine sand, brown, no solvent or hydrocarbon odor (70-30-0).		
140								Boring terminated at 140 feet bgs, backfilled with bentonite grout from 2 feet to 128 feet depth. Two-inch-diameter well installed to a depth of 140 feet bgs, screened from 130 to 140 feet bgs, with silica sand from 128 to 140 feet bgs, bentonite seal from 118 to 128 feet bgs, bentonite grout from 2 to 118 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW105	
145									
150									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 018

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0						Asphalt		4"-thick asphalt surfacing. Boring hand-cleared to 5 feet bgs.	
5				0.1		SM		Dry, dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
				0.5		SM		Dry, dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
		100		0.5		SM		Dry, dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
				1.3		SM		Dry, dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
10				0.1	B106-10	SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
				0.1		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
			100	0.1		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
				0.1		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	
15				0.0		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-60-20).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15				0.0		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
			100	0.0		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
20				0.0	B106-20	SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
			100	0.0		SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, dark brown, no solvent or hydrocarbon odor (25-65-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, dark brown, no solvent or hydrocarbon odor (25-65-10).	
25				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive gray, no solvent or hydrocarbon odor (35-55-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive gray, no solvent or hydrocarbon odor (35-55-10).	
			100	0.0		SM		Dry, very dense, silty SAND with gravel, cohesive gray, no solvent or hydrocarbon odor (35-55-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive gray, no solvent or hydrocarbon odor (35-55-10).	
30				0.0		SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-55-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30				0.0	B106-30	SP-SM		Moist, dense, fine to medium SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (10-80-10).	
			100	0.0		SP-SM		Moist, dense, fine to medium SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (10-80-10).	
				0.0		SP-SM		Moist, dense, fine to medium SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (10-80-10).	
				0.0		SP-SM		Moist, dense, fine to medium SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (10-80-10).	
35				10.4		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
			--	4.9		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
				1.3		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
				0.5		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
40				0.5	B106-40	SP-SM			
				0.5		SM-ML		Dry, hard, fine sandy SILT with gravel, gray cohesive, no solvent or hydrocarbon odor (50-35-15).	
			--	0.5		SP-SM		Damp, dense, fine to medium SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
				0.5		SP-SM		Damp, dense, fine to medium SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	
45				0.5		SP-SM		Damp, dense, fine to medium SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45				0.5		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
			100	0.5		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
				1.3		SM		Moist, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
				0.1		SM		Moist, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
50				0.5	B106-50	SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
			100	0.1		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-45-20).	
55				0.0		SM		Damp, very dense, silty SAND with gravel and cobbles, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
			100	0.0		SM		Moist, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
				0.1		SM		Moist, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
60				0.1		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60				0.0	B106-60	SM		Moist, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon (35-55-10).	
			100	0.0		SM		Moist, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-55-10).	
65				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-50-15).	
			100	0.0		SM		Dry, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-50-15).	
				0.0		SM		Dry, very dense, silty SAND with gravel, dark gray cohesive, no solvent or hydrocarbon odor (35-50-15).	
70				0.0	B106-70	SM		Damp, very dense, silty SAND with gravel, dark gray cohesive, no solvent or hydrocarbon odor (35-55-10).	
			100	0.0		SM		Damp, very dense, silty SAND with gravel, dark gray cohesive, no solvent or hydrocarbon odor (35-55-10).	
				0.0		ML		Damp, hard, fine sandy SILT, weak lamination, cohesive gray, no solvent or hydrocarbon odor (60-40-0).	
				0.0		ML		Dry, hard, fine sandy SILT, weak lamination, cohesive gray, no solvent or hydrocarbon odor (60-40-0).	
75				0.0					

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8.6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-50-15).	
			100	0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-50-15).	
				0.0		SM		Dry, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-50-15).	
				0.0		SM		Damp, very dense, silty SAND with gravel, cohesive dark gray, no solvent or hydrocarbon odor (35-50-15).	
80				0.0	B106-80	SM-GM		Damp, very dense, gravelly silty SAND, dark gray, no solvent or hydrocarbon odor (30-30-40).	
				0.0		SM-GM		Damp, very dense, gravelly silty SAND, dark gray, no solvent or hydrocarbon odor (30-30-40).	
			100	0.0		SM-ML		Damp, very dense, silty SAND, dark gray, no solvent or hydrocarbon odor (35-40-25).	
				0.0		SM-ML		Damp, very dense, silty SAND, dark gray, no solvent or hydrocarbon odor (35-40-25).	
85				0.3		SM		Moist, very dense, silty SAND, dark gray cohesive, no solvent or hydrocarbon odor (30-70-0).	
				0.0		SM		Moist, very dense, silty SAND, dark gray cohesive, no solvent or hydrocarbon odor (30-70-0).	
			100	0.0		SP-SM		Moist, very dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (15-75-10).	
				0.0		SP-SM		Moist, very dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (15-75-10).	
90				0.0		SP-SM		Moist, very dense, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (15-75-10).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90				0.0	B106-90	SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
95				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
100				0.0	B106-100	SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark brown, no solvent or hydrocarbon odor (10-85-5).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark brown, no solvent or hydrocarbon odor (10-85-5).	
			100	0.0		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark brown, no solvent or hydrocarbon odor (10-85-5).	
				0.0		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark brown, no solvent or hydrocarbon odor (10-85-5).	
105				0.0		SP-SM		Wet, dense, medium to fine SAND with silt and gravel, dark brown, no solvent or hydrocarbon odor (10-85-5).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8.6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105				0.0		SP-SM		Moist, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
			100	0.0		SP-SM		Moist, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
				0.0		SP-SM		Moist, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Moist, dense, coarse to medium SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-90-0).	
110				0.0	B106-110	SP-SM		Wet, dense, coarse to medum SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, coarse to medum SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, medum to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP-SM		Wet, dense, medum to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
115				0.0		SP-SM		Wet, dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
				0.0		SP-SM		Wet, dense, fine to medium SAND with silt and trace gravel, dark gray, no solvent or hydrocarbon odor (10-87-03).	
120				0.0		SP-SM		Wet, dense, fine to medium SAND with silt and trace gravel, dark gray, no solvent or hydrocarbon odor (10-87-03).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8.6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
120			100	0.0	B106-120	SP-SM		Wet, dense, medium SAND gravel with silt, dark gray, no solvent or hydrocarbon odor (10-70-10).	
			100	0.0		SP-SM		Wet, dense, coarse, medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-50-10).	
			100	0.0		SP-SM		Wet, dense, medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP-SM		Wet, dense, medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
125			100	0.0		SP-SM		Wet, dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP-SM		Wet, dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
			100	0.0		SP		Wet, dense, gravelly, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (5-60-35).	
			100	0.0		SP		Wet, dense, gravelly, coarse to medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (5-60-35).	
130			100	0.0	B106-130	GM		Wet, dense, silty sandy GRAVEL, dark gray, no solvent or hydrocarbon odor (25-25-50).	
			100	0.0		GM		Wet, dense, silty sandy GRAVEL, dark gray, no solvent or hydrocarbon odor (25-25-50).	
			100	0.0		GM		Wet, dense, silty sandy GRAVEL, dark gray, no solvent or hydrocarbon odor (25-25-50).	
			100	0.0		GM		Wet, dense, silty sandy GRAVEL, dark gray, no solvent or hydrocarbon odor (25-25-50).	

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter Property
Project Number: 0797-001
Logged by: RAH
Date Started: 8/14/12
Surface Conditions: Concrete
Well Location N/S: 84.7' south of SE corner of 700 Dexter
Well Location E/W: 112' west of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 08/16/12

BORING LOG | **B106**
 MW106

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
135					B106-140	SP-SM		Wet, dense, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).	
				SP-SM			Wet, dense, medium to fine SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).		
				SP-SM			Wet, dense, medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).		
140				SP-SM			Wet, dense, medium SAND with gravel and silt, dark gray, no solvent or hydrocarbon odor (10-80-10).		
140								Boring terminated at 140 feet bgs, backfilled with bentonite grout from 2 feet to 118 feet depth. Two-inch diameter well installed to a depth of 140 feet bgs, screened from 130 to 140 feet bgs, with silica sand from 128 to 140 feet bgs, bentonite seal from 118 to 128 feet bgs, bentonite grout from 2 to 118 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW106	
145									
150									

Drilling Co./Driller: Major Drilling/Dan
Drilling Equipment: LAR Sonic
Sampler Type: Core Barrel
Hammer Type/Weight: -- lbs
Total Boring Depth: 140 feet bgs
Total Well Depth: 140 feet bgs
State Well ID No.: BCK 019

Well/Auger Diameter: 2/8,6 inches
Well Screened Interval: 130 to 140 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: Colorado Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite grout
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/03/12
Surface Conditions: Concrete
Well Location N/S: 89' N of SE corner of 700 Dexter
Well Location E/W: 7.5' E of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 12/03/12

BORING LOG | **B107**
 MW107

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17.35 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								4" Concrete surfacing.	
5	2 1 1		20	1.5	B107-05	SP-SM (FILL)		Damp, very loose, medium to fine SAND with gravel and fill debris, brown, no solvent or hydrocarbon odor (10-80-10) (FILL).	
10	35 8 7		100	0.0		MH		Damp, stiff, SILT with fine sand and gravel, light brown, no solvent or hydrocarbon odor (60-30-10).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 773

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/03/12
Surface Conditions: Concrete
Well Location N/S: 89' N of SE corner of 700 Dexter
Well Location E/W: 7.5' E of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 12/03/12

BORING LOG | **B107**
 MW107

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17.35 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	7	7	100	1.5	B107-15	MH		Moist, stiff, SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (60-30-10).	
	7					SM-MH		Damp, medium dense, silty SAND with gravel, wood waste, and rootlets, slightly plastic, shoreline sediments, dark brown, no solvent or hydrocarbon odor (45-45-10).	
	7								
20	10	10	100	2.0		SM		Damp, medium dense, silty fine to medium SAND, gray, no solvent or hydrocarbon odor (35-65-0).	
	10								
	15								
25	7	7	100	3.6	B107-25	SP-SM		Wet, medium dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (15-75-10).	
	8								
	9								
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 773

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/03/12
Surface Conditions: Concrete
Well Location N/S: 89' N of SE corner of 700 Dexter
Well Location E/W: 7.5' E of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 12/03/12

BORING LOG | **B107**
 MW107

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17.35 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	20-25		90	22.0		SM		Wet, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (35-55-10).	
35	50/6"		33	82.1	B107-35	SM		Wet, very dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10).	
40	50/6"		33	20.2		SM		Wet, very dense, silty medium to fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (25-65-10).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 773

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/03/12
Surface Conditions: Concrete
Well Location N/S: 89' N of SE corner of 700 Dexter
Well Location E/W: 7.5' E of SE corner of 700 Dexter
Reviewed by: CCC
Date Completed: 12/03/12

BORING LOG | **B107**
 MW107

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17.35 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	X	50/6"	33	2.5	B107-45	SM		Damp, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (30-65-5). Boring terminated at 45.5 feet bgs. Two-inch-diameter well installed to a depth of 45 feet bgs, screened from 35 to 40 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW107.	
50									
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 773

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/14/12
Surface Conditions: concrete
Well Location N/S: 10.8' S of NW corner Seattle Ducati building
Well Location E/W: 14' W of NW corner of Seattle Ducati building
Reviewed by: CCC
Date Completed: 12/14/12

BORING LOG | **B108**
 MW108

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								6" Concrete surfacing.	
								Cleared borehole with a vactor truck to a depth of 9 feet below ground surface.	
10	5 6 8		50	3.4		SM (FILL)		Damp, medium dense, silty SAND with Fill debris, black, no solvent or hydrocarbon odor. (FILL).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA LAR
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BHS765

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

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Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/14/12
Surface Conditions: concrete
Well Location N/S: 10.8' S of NW corner Seattle Ducati building
Well Location E/W: 14' W of NW corner of Seattle Ducati building
Reviewed by: CCC
Date Completed: 12/14/12

BORING LOG | B108 MW108

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	3-5	3	60	2.1	B108-15	SM		Wet, loose, silty SAND with gravel and wood waste, dark gray, no solvent or hydrocarbon odor (35-55-10) (FILL).	
20	4-5	4	80	0.3		SM		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
25	7-9	7	80	0.3	B108-25	SM-ML		Moist, medium dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA LAR
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BHS765

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/14/12
Surface Conditions: concrete
Well Location N/S: 10.8' S of NW corner Seattle Ducati building
Well Location E/W: 14' W of NW corner of Seattle Ducati building
Reviewed by: CCC
Date Completed: 12/14/12

BORING LOG | B108 MW108

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	12-14-17		100	0.0		SM		Wet, dense, silty fine SAND, gray, no solvent or hydrocarbon odor (40-60-0). Lacostrine sediments.	
	17-20-23		100	0.3		SM		Wet, dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (40-60-0). Lacostrine sediments.	
35	50/6"		100	0.0	B108-35	MH		Wet, very dense, SILT with fine sand, plastic, gray, no solvent or hydrocarbon odor (80-20-0).	
	20-50/6"		90	0.0		SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
40	16-50/6"		50	0.9		SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
	50/6"		40	0.3		SM		Wet, very dense, silty SAND, brown, no solvent or hydrocarbon odor (40-60-0).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA LAR
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BHS765

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/14/12
Surface Conditions: concrete
Well Location N/S: 10.8' S of NW corner Seattle Ducati building
Well Location E/W: 14' W of NW corner of Seattle Ducati building
Reviewed by: CCC
Date Completed: 12/14/12

BORING LOG | **B108**
 MW108

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6"	50	50	0.0	B108-45	SM		Wet, very dense, silty SAND, brown, no solvent or hydrocarbon odor (40-60-0).	
	50/6"	50	50	0.0		SM		Wet, very dense, silty SAND, brown, no solvent or hydrocarbon odor (40-60-0).	
50	50/6"	50	50	0.0	B108-50	SM		Damp, very dense, silty SAND, cohesive, brown, no solvent or hydrocarbon odor (40-60-0).	
								Boring terminated at 50.5 feet bgs. Two-inch-diameter well installed to a depth of 50 feet bgs, screened from 40 to 50 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW108.	
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA LAR
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BHS765

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 138.5' N of SE corner of Seattle City Light Building
Well Location E/W: 7.0' E of SE corner of Seattle City Light Building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B109**
 MW109

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								6" concrete surfacing.	
5	2 2 3		100	0.0	B109-05	SM (FILL)		Moist, loose, silty SAND with gravel, fill material, gray, no solvent or hydrocarbon odor (30-60-10) (FILL).	
10	1 1 1		100	0.0		SM (FILL)		Moist, very loose, silty SAND with gravel, gray to black, slight hydrocarbon odor (30-60-10) (FILL).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 771

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

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Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 138.5' N of SE corner of Seattle City Light Building
Well Location E/W: 7.0' E of SE corner of Seattle City Light Building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B109**
 MW109

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	2-3	3	100	6.9	B109-15	SM		Moist, loose, silty medium to fine SAND with gravel, gray, moderate hydrocarbon odor (20-75-5).	
20	2-3	3	100	0.5		SM		Wet, loose, silty SAND with gravel, gray, sheen on sample, no solvent or hydrocarbon odor (30-55-15).	
25	3-5	3	100	0.0	B109-25	SM		Wet, loose, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 771

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

 Page: **2 of 4**



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 138.5' N of SE corner of Seattle City Light Building
Well Location E/W: 7.0' E of SE corner of Seattle City Light Building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B109**
 MW109

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	4-5	5	100	0.0		MH		Damp, loose, organic sandy SILT with plant material, dark brown, no solvent or hydrocarbon odor (60-40-0).	
	20-50/6"	50/6"	100	0.5		SM		Damp, very dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
35	7-9	20	100	0.0	B109-35	SP-SM		Wet, medium dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
	15-50/6"	50/6"	60	0.0		SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
40	50/6"	50/6"	30	0.0		SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
	14-50/6"	50/6"	60	30.8		SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 771

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 138.5' N of SE corner of Seattle City Light Building
Well Location E/W: 7.0' E of SE corner of Seattle City Light Building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B109**
 MW109

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6"	30	34.3	B109-45	SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0). Boring terminated at 45.5 feet bgs. Two-inch-diameter well installed to a depth of 45 feet bgs, screened from 35 to 45 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW109.		
50									
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS 771

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 10.9' N of SE corner of Seattle City Light building
Well Location E/W: 7.6' E of SE corner of Seattle City Light building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B110**
 MW110

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 20.24 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								5" Concrete surfacing.	
5	2 2 2		80	1.6	B110-05	SM (FILL)		Damp, very loose, silty SAND with trace gravel, brown, no solvent or hydrocarbon odor (25-70-5) (FILL).	
10	3 3 3		90	0.5		SM (FILL)		Damp, loose, silty SAND with gravel, brown, no solvent or hydrocarbon odor (25-65-10) (FILL).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS772

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 10.9' N of SE corner of Seattle City Light building
Well Location E/W: 7.6' E of SE corner of Seattle City Light building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B110**
 MW110

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 20.24 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	5-5	5	100	0.0	B110-15	SM (FILL)		Damp, loose, silty SAND with trace gravel, brown, no solvent or hydrocarbon odor (25-70-5) (FILL).	
20	9-11	9	90	3.3		SM (FILL)		Damp, medium dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10) (FILL).	
25	7-10	7	100	1.1	B110-25	SM-ML		Wet, very stiff, fine sandy SILT with gravel, wood waste, and plant material, no solvent or hydrocarbon odor (45-40-15) (FILL).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS772

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 10.9' N of SE corner of Seattle City Light building
Well Location E/W: 7.6' E of SE corner of Seattle City Light building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B110**
 MW110

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 20.24 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	8-12-15		100	0.5		SP-SM		Wet, medium dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
	12-15-15		100	1.1		SP-SM SM		Wet, medium dense, medium to fine SAND with silt, brown, no solvent or hydrocarbon odor (10-90-0). Wet, medium dense, silty medium to fine SAND, brown, no solvent or hydrocarbon odor (25-75-0).	
35	50/6"		30	9.9	B110-35	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (35-55-10).	
	50/6"		30	0.5		SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (35-55-10).	
40	50/6"		30	1.1		ML		Damp, hard, silt with fine SAND and trace gravel, cohesive, gray, no solvent or hydrocarbon odor (60-35-5).	
	50/6"		30	1.1		SM-ML		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (45-45-10).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS772

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/04/12
Surface Conditions: Concrete
Well Location N/S: 10.9' N of SE corner of Seattle City Light building
Well Location E/W: 7.6' E of SE corner of Seattle City Light building
Reviewed by: CCC
Date Completed: 12/04/12

BORING LOG | **B110**
 MW110

Site Address: 700 Dexter Avenue
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 20.24 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	X	50/6"	30	1.1	B110-45	SM		Damp, very dense, silty fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (35-55-10). Boring terminated at 45.5 feet bgs. Two-inch-diameter well installed to a depth of 45 feet bgs, screened from 35 to 45 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW110.	
50									
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS772

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/05/12
Surface Conditions: Concrete
Well Location N/S: 92.5' N of SE corner of SCL building
Well Location E/W: 7.5' E of SE corner of SCL building
Reviewed by: CCC
Date Completed: 12/05/12

BORING LOG | **B111**
 MW111

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete surfacing.	
5	1 2 3		90	0.8		SM (FILL)		Moist, loose, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-60-15) (FILL).	
10	1 1 1		80	0.2	B111-10	SM (FILL)		Damp, very loose, silty medium to fine SAND with gravel, wood waste, dark brown, no solvent or hydrocarbon odor (25-60-15) (FILL).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS770

Well/Auger Diameter: 2/8.25/10.25 inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:
 Conductor casing set at 50 feet bgs.



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/05/12
Surface Conditions: Concrete
Well Location N/S: 92.5' N of SE corner of SCL building
Well Location E/W: 7.5' E of SE corner of SCL building
Reviewed by: CCC
Date Completed: 12/05/12

BORING LOG | **B111**
 MW111

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	3-4	3	100	1.8		SM		Damp, loose, silty fine to medium SAND, gray, slight hydrocarbon odor (40-60-0).	
20	4-4	4	100	1.3	B111-20	SM-ML		Wet, medium stiff, fine sandy SILT, slightly plastic, gray, no solvent or hydrocarbon odor (55-45-0).	
25	4-7	4	100	0.8		SM		Wet, medium dense, silty medium to fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (40-55-5).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS770

Well/Auger Diameter: 2/8.25/10.25 inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:
 Conductor casing set at 50 feet bgs.



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/05/12
Surface Conditions: Concrete
Well Location N/S: 92.5' N of SE corner of SCL building
Well Location E/W: 7.5' E of SE corner of SCL building
Reviewed by: CCC
Date Completed: 12/05/12

BORING LOG | **B111**
 MW111

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	7-10	10			B111-30	SP-SM		Wet, medium dense, fine to medium SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (15-80-5).	
	11-13	60	0.2			SP-SM		Wet, medium dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (15-85-0).	
35	6-7	80	1.8			SP-SM		Wet, medium dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
	7-50/6"	80	17.0		B111-38	SP-SM		Wet, very dense, fine to coarse SAND with silt and trace gravel, dark gray, no solvent or hydrocarbon odor (10-85-5).	
40	50/6"	100	3.5			SP-SM		Wet, very dense, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0). Heaving sands.	
	12-14		57.8			SP-SM		Wet, medium dense, fine to medium SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
	14-16					SM		Damp, medium dense, silty SAND with trace gravel, gray, no solvent or hydrocarbon odor (25-70-5).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS770

Well/Auger Diameter: 2/8.25/10.25 inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:
 Conductor casing set at 50 feet bgs.



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/05/12
Surface Conditions: Concrete
Well Location N/S: 92.5' N of SE corner of SCL building
Well Location E/W: 7.5' E of SE corner of SCL building
Reviewed by: CCC
Date Completed: 12/05/12

BORING LOG | **B111**
 MW111

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	20 50/6"	60	32.8			SP-SM		Wet, very dense, fine to medium SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
	25 50/6"	60	36.0			SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-50-10).	
50	50/6"	30	8.9	B111-50		ML		Damp, hard, SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-35-15).	
55	50/6"	30	8.4			ML		Damp, hard, SILT with sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-35-15).	
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS770

Well/Auger Diameter: 2/8.25/10.25 inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:
 Conductor casing set at 50 feet bgs.



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/05/12
Surface Conditions: Concrete
Well Location N/S: 92.5' N of SE corner of SCL building
Well Location E/W: 7.5' E of SE corner of SCL building
Reviewed by: CCC
Date Completed: 12/05/12

BORING LOG | **B111**
 MW111

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	50/6"	30	0.8	B111-60	GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (25-25-50).		
65	50/6"	30	0.2		GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-25-45).		
70	50/6"	30	2.9	B111-70	GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-20-50).		
	50/6"	30	0.2		GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-20-50).		
75									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS770

Well/Auger Diameter: 2/8.25/10.25 inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:
 Conductor casing set at 50 feet bgs.



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/05/12
Surface Conditions: Concrete
Well Location N/S: 92.5' N of SE corner of SCL building
Well Location E/W: 7.5' E of SE corner of SCL building
Reviewed by: CCC
Date Completed: 12/05/12

BORING LOG | **B111**
 MW111

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75	50/5"		100	1.9		GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-20-50).	
	50/6"		100	0.4		GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-20-50).	
80	50/6"		30	3.5	B111-80	GM		Wet, very dense, silty sandy GRAVEL, gray, no solvent or hydrocarbon odor (30-20-50).	
								Boring terminated at 80.5 feet bgs. Two-inch-diameter well installed to a depth of 80 feet bgs, screened from 70 to 80 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW111.	
85									
90									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS770

Well/Auger Diameter: 2/8.25/10.25 inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite chips
Monument Type: Flush mount

Notes/Comments:
 Conductor casing set at 50 feet bgs.



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/11/12
Surface Conditions: Asphalt/Concrete
Well Location N/S: 105.5' N of SE corner of building
Well Location E/W: 15' E of SE corner of building
Reviewed by: CCC
Date Completed: 12/11/12

BORING LOG | **B112**
 MW112

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Asphalt/concrete at the surface. Borehole cleared to a depth of 9 feet bgs with a vactor truck.	
10	0 1 1		100	1.4	B112-10	SM-ML (FILL)		Damp, soft, fine sandy SILT with gravel and rootlets, brown, no solvent or hydrocarbon odor (40-40-20) (FILL).	

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 85.5 feet bgs
Total Well Depth: 85 feet bgs
State Well ID No.: BHS767

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 75 to 85 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/11/12
Surface Conditions: Asphalt/Concrete
Well Location N/S: 105.5' N of SE corner of building
Well Location E/W: 15' E of SE corner of building
Reviewed by: CCC
Date Completed: 12/11/12

BORING LOG | **B112**
 MW112

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	30 50/5"	30	100	1.7		SM		Damp, very dense, silty SAND with gravel, reddish brown, no solvent or hydrocarbon odor (25-55-20).	
20	50/6"	50	20	4.6	B112-20	SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
25	50/6"	50	100	2.8		SP-SM		Wet, very dense, medium to fine SAND with silt, reddish brown, no solvent or hydrocarbon odor (15-85-0).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 85.5 feet bgs
Total Well Depth: 85 feet bgs
State Well ID No.: BHS767

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 75 to 85 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

 Page: | **2 of 6**



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/11/12
Surface Conditions: Asphalt/Concrete
Well Location N/S: 105.5' N of SE corner of building
Well Location E/W: 15' E of SE corner of building
Reviewed by: CCC
Date Completed: 12/11/12

BORING LOG | **B112**
 MW112

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	50/6"	60		3.4	B112-30	SM		Dry, very dense, silty fine SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (30-55-15).	
35	50/6"	30		1.7		SM		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
40	50/6"	100		0.0	B112-40	SM		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-55-15).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 85.5 feet bgs
Total Well Depth: 85 feet bgs
State Well ID No.: BHS767

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 75 to 85 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

 Page: | **3 of 6**



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/11/12
Surface Conditions: Asphalt/Concrete
Well Location N/S: 105.5' N of SE corner of building
Well Location E/W: 15' E of SE corner of building
Reviewed by: CCC
Date Completed: 12/11/12

BORING LOG | **B112**
 MW112

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6"	30		0.8		SM		Damp, very dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (30-50-20).	
50	50/5"	50		2.3	B112-50	SM-ML		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-40-20).	
	50/5"	50		2.3		SM-ML		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-45-15).	
55	50/6"	50		2.8		SP-SM SM		Moist, very dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0). Moist, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
	50/3"	30		2.3		SM-ML		Damp, very dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (40-45-5).	
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 85.5 feet bgs
Total Well Depth: 85 feet bgs
State Well ID No.: BHS767

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 75 to 85 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/11/12
Surface Conditions: Asphalt/Concrete
Well Location N/S: 105.5' N of SE corner of building
Well Location E/W: 15' E of SE corner of building
Reviewed by: CCC
Date Completed: 12/11/12

BORING LOG | B112 MW112

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	50/6"	50	50	1.7	B112-60	SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
65	50/6"	50	50	1.7		SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-55-5).	
70	50/6"	50	50	1.7	B112-70	SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
75									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 85.5 feet bgs
Total Well Depth: 85 feet bgs
State Well ID No.: BHS767

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 75 to 85 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/11/12
Surface Conditions: Asphalt/Concrete
Well Location N/S: 105.5' N of SE corner of building
Well Location E/W: 15' E of SE corner of building
Reviewed by: CCC
Date Completed: 12/11/12

BORING LOG | **B112**
 MW112

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75	50/8"	50	50	0.5	B112-75	SM-ML SP-SM		Wet, very dense, silty SAND with trace gravel, gray, no solvent or hydrocarbon odor (45-50-5). Wet, very dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
80	50/4"	30	0.5	B112-80	SM-ML		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).		
85	50/6"	30	0.0	B112-85	SM-ML		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).		
90								Boring terminated at 85.5 feet bgs. Two-inch-diameter well installed to a depth of 85 feet bgs, screened from 75 to 85 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW112.	

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 85.5 feet bgs
Total Well Depth: 85 feet bgs
State Well ID No.: BHS767

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 75 to 85 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: -
Well Location E/W: -
Reviewed by: CCC
Date Completed: 12/17/12

BORING LOG | **B113**
 MW113

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 1.5 feet thick at surface.	
5								Cleared borehole with a vector truck to a depth of 9 feet below ground surface.	
10	12	12	100	44.8	B113-10	SM		Dry, medium dense, silty medium to fine SAND with gravel, light brown, no solvent or hydrocarbon odor (15-70-15).	
15									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS764

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 70-80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: -
Well Location E/W: -
Reviewed by: CCC
Date Completed: 12/17/12

BORING LOG | **B113**
 MW113

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	15-16	22	100	63.7		SM		Damp, dense, silty SAND with gravel, gray, moderate hydrocarbon odor (25-65-10).	
20	20-22	8	100	5.2	B113-20	SP-SM		Wet, medium dense, medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (10-75-15).	
25	25-27	8	100	1.5		SM		Wet, medium dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-60-15).	
30									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS764

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 70-80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

 Page: 2 of 6



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: -
Well Location E/W: -
Reviewed by: CCC
Date Completed: 12/17/12

BORING LOG | **B113**
 MW113

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	12	100	0.3	B113-30	SM-ML		Wet, medium dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10). Lacostrine sediments.		
35	13	100	0.3		SM-ML		Wet, medium dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (45-50-5). Lacostrine sediments.		
40	9	100	0.0	B113-40	ML		Damp, medium dense, SILT with fine sand, gray, no solvent or hydrocarbon odor (80-20-0).		
45									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS764

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 70-80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

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Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: -
Well Location E/W: -
Reviewed by: CCC
Date Completed: 12/17/12

BORING LOG | **B113**
 MW113

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	11-17	11	100	2.1		SP-SM		Wet, dense, medium to fine SAND with trace gravel, gray no solvent or hydrocarbon odor (10-85-5).	
50	17-23	14	100	0.3	B113-50	SP-SM		Wet, dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
55	23-20	20	100	0.9		SP		Wet, dense, medium to fine SAND with trace silt, gray, no solvent or hydrocarbon odor (5-95-0).	
60									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS764

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 70-80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

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Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: -
Well Location E/W: -
Reviewed by: CCC
Date Completed: 12/17/12

BORING LOG | **B113**
 MW113

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60			0					No recovery. Driller reports sandy material.	
65			0				No recovery. Driller reports sandy material.		
70			0				No recovery.		
75									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS764

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 70-80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: -
Well Location E/W: -
Reviewed by: CCC
Date Completed: 12/17/12

BORING LOG | **B113**
 MW113

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75			0					No recovery. Driller reports sand.	
80			0				No recovery. Driller reports sand.		
85							Boring terminated at 80 feet below ground surface. Two-inch-diameter well installed to a depth of 80 feet bgs, screened from 70 to 80 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW113.		
90									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BHS764

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 70-80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/10/12
Surface Conditions: Gravel
Well Location N/S: 145.4' S of SE corner OF 700 Dexter bldg.
Well Location E/W: 75' W of SE corner OF 700 Dexter bldg.
Reviewed by: CCC
Date Completed: 12/10/12

BORING LOG | **B114**
 MW114

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 30 feet bgs
Water Depth After Completion 17.05 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0									
5	2 2 3		50	0.8		SP-SM (FILL)		Damp, loose, medium to fine SAND with gravel and silt, brown, no solvent or hydrocarbon odor (10-75-15). Fill material.	
10									
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS768

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:

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Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/10/12
Surface Conditions: Gravel
Well Location N/S: 145.4' S of SE corner OF 700 Dexter bldg.
Well Location E/W: 75' W of SE corner OF 700 Dexter bldg.
Reviewed by: CCC
Date Completed: 12/10/12

BORING LOG | **B114**
 MW114

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 30 feet bgs
Water Depth After Completion 17.05 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	50/5"		100	0.0	B114-15	SM		Dry, very dense, silty fine SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
20	50/6"		100	0.0		SM		Dry, very dense, silty fine SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).	
25	50/6"		100	0.8	B114-25	SM		Dry, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (35-55-10).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS768

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/10/12
Surface Conditions: Gravel
Well Location N/S: 145.4' S of SE corner OF 700 Dexter bldg.
Well Location E/W: 75' W of SE corner OF 700 Dexter bldg.
Reviewed by: CCC
Date Completed: 12/10/12

BORING LOG | **B114**
 MW114

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 30 feet bgs
Water Depth After Completion 17.05 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	50/6"		100	0.2		SP-SM		Wet, very dense, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).	
35	50/6"		100	42.8	B114-35	SM		Moist, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (45-55-0).	
	50/6"		100	40.2		SM		Moist, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (45-55-0).	
40	50/6"		100	0.8	B114-40	SM-SP		Wet, very dense, medium to fine SAND with silt, light gray, no solvent or hydrocarbon odor (15-85-0).	
	50/2"		100	0.2		SM-ML		Moist, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-45-15).	

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS768

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/10/12
Surface Conditions: Gravel
Well Location N/S: 145.4' S of SE corner OF 700 Dexter bldg.
Well Location E/W: 75' W of SE corner OF 700 Dexter bldg.
Reviewed by: CCC
Date Completed: 12/10/12

BORING LOG | **B114**
 MW114

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 30 feet bgs
Water Depth After Completion 17.05 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/3"	100	1.3	B114-45	SM-ML		<p>Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-45-15).</p> <p>Boring terminated at 45.5 feet below ground surface. Two-inch-diameter well installed to a depth of 45 feet bgs, screened from 35 to 45 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW114.</p>		
50									
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS768

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35 to 45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/13/12
Surface Conditions: Concrete
Well Location N/S: 25.6' N of SE corner of building on 9th and Roy
Well Location E/W: 18.6' E of SE corner of building on 9th and Roy
Reviewed by: CCC
Date Completed: 12/13/12

BORING LOG | **B115**
 MW115

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 1.5 feet thick at surface.	
								Boring cleared with a vactor truck to a depth of 9 feet below ground surface.	
10	3 7 7		80	1.4	B115-10	SM (FILL)		Damp, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-55-15) (FILL).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS766

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/13/12
Surface Conditions: Concrete
Well Location N/S: 25.6' N of SE corner of building on 9th and Roy
Well Location E/W: 18.6' E of SE corner of building on 9th and Roy
Reviewed by: CCC
Date Completed: 12/13/12

BORING LOG | **B115**
 MW115

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	15	60	0.8	B115-15	SM (FILL)		Moist, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-55-15) (FILL).		
20	7 5 3	100	0.8		SP-SM (FILL)		Wet, loose, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (15-70-15) (FILL).		
25	5 5 6	100	0.2	B115-25	SM (FILL)		Wet, loose, silty SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10) (FILL).		
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS766

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/13/12
Surface Conditions: Concrete
Well Location N/S: 25.6' N of SE corner of building on 9th and Roy
Well Location E/W: 18.6' E of SE corner of building on 9th and Roy
Reviewed by: CCC
Date Completed: 12/13/12

BORING LOG | **B115**
 MW115

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	7-10	10	100	0.8		SM		Wet, medium dense, silty fine SAND, gray, no solvent or hydrocarbon odor (40-60-0).	
	7-9	7	100	0.2		ML		Wet, medium dense, SILT with fine sand, gray, no solvent or hydrocarbon odor (80-20-0). Lacostrine deposits.	
35	3-3	3	100	0.8	B115-35	MH		Wet, medium dense, SILT with fine sand, plastic, gray, no solvent or hydrocarbon odor (80-20-0). Lacostrine deposits.	
	4-4	4	100	0.2		MH		Wet, medium dense, SILT with fine sand and trace gravel, plastic, gray, no solvent or hydrocarbon odor (80-15-5). Lacostrine deposits.	
	10-15	10							
40	12-13	12	80	0.8		SM		Wet, medium dense, silty fine SAND, gray, no solvent or hydrocarbon odor (40-60-0).	
	13-15	13							
	12-13	12	100	0.8		SP-SM		Wet, medium dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).	
45	13-15	13							

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS766

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/13/12
Surface Conditions: Concrete
Well Location N/S: 25.6' N of SE corner of building on 9th and Roy
Well Location E/W: 18.6' E of SE corner of building on 9th and Roy
Reviewed by: CCC
Date Completed: 12/13/12

BORING LOG | **B115**
 MW115

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	23 50/6"	100	0.8	B115-45	SP-SM		Wet, very dense, medium to fine SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0).		
50							Boring terminated at 46 feet bgs. Two-inch-diameter well installed to a depth of 45 feet bgs, screened from 35 to 45 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW115.		
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS766

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/7/12
Surface Conditions: Concrete
Well Location N/S: 18' E of SE corner of restaurant on 9th and Roy
Well Location E/W: 106' N of SE corner of restaurant on 9th and Roy
Reviewed by: CCC
Date Completed: 12/7/12

BORING LOG | **B116**
 MW116

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 1.5' thick at surface.	
								Borehole cleared to a depth of 9 feet bgs with a vactor truck.	
10	2 1 1		100	0.5		SM (FILL)		Damp, very loose, silty SAND with trace gravel, light brown, no solvent or hydrocarbon odor (40-55-5).	
15									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS769

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/7/12
Surface Conditions: Concrete
Well Location N/S: 18' E of SE corner of restaurant on 9th and Roy
Well Location E/W: 106' N of SE corner of restaurant on 9th and Roy
Reviewed by: CCC
Date Completed: 12/7/12

BORING LOG | **B116**
 MW116

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	2 1 1		100	0.0	B116-15	SM (FILL)		Wet, very loose, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (35-55-10) (FILL).	
20	4 3 4		100	0.5		SP-SM (FILL)		Wet, loose, medium to fine SAND with silt and gravel, dark gray, no solvent or hydrocarbon odor (10-80-10) (FILL).	
25	2 4 3		100	1.1	B116-25	SP-SM (FILL)		Wet, loose, medium to fine SAND with silt and trace gravel, dark gray, no solvent or hydrocarbon odor (15-80-5) (FILL).	
30									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS769

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/7/12
Surface Conditions: Concrete
Well Location N/S: 18' E of SE corner of restaurant on 9th and Roy
Well Location E/W: 106' N of SE corner of restaurant on 9th and Roy
Reviewed by: CCC
Date Completed: 12/7/12

BORING LOG | **B116**
 MW116

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	12-15		100	0.5		SP-SM		Wet, medium dense, medium to fine SAND and silt and trace gravel, dark gray, no solvent or hydrocarbon odor (10-85-5).	
	14-15					ML		Damp, medium dense, SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-40-10).	
	23-50/6"		100	1.1		SM-ML		Moist, very dense, SILT with fine sand, slightly plastic, gray, no solvent or hydrocarbon odor (80-20-0).	
35	12-23		100	0.5	B116-35	ML		Moist, very dense, SILT with fine sand, slightly plastic, gray, no solvent or hydrocarbon odor (80-20-0).	
	30-50/6"		100	1.1		ML		Wet, very dense, SILT with fine sand, slightly plastic, gray, no solvent or hydrocarbon odor (80-20-0).	
40	17-50/6"		100	0.5		ML		Wet, very dense, SILT with fine sand, slightly plastic, gray, no solvent or hydrocarbon odor (80-20-0).	
	17-50/6"		60	1.1		SM-ML		Wet, very dense, SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0).	
45									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS769

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/7/12
Surface Conditions: Concrete
Well Location N/S: 18' E of SE corner of restaurant on 9th and Roy
Well Location E/W: 106' N of SE corner of restaurant on 9th and Roy
Reviewed by: CCC
Date Completed: 12/7/12

BORING LOG | **B116**
 MW116

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	17 12 14		100		B116-45	MH		Wet, medium dense, SILT with fine sand, plastic, dark gray, no solvent or hydrocarbon odor (90-10-0).	
50								Boring terminated at 46.5 feet below ground surface. Two-inch-diameter well installed to a depth of 45 feet bgs, screened from 35 to 45 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW116.	
55									
60									

Drilling Co./Driller: Cascade/Curtis
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BHS769

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 02/04/13
Surface Conditions: Asphalt
Well Location N/S: 96' south of power pole at SE corner of the intersection of Roy and Dexter
Well Location E/W: 12.6' west of power pole at SE corner of the intersection of Roy and Dexter
Reviewed by: CCC
Date Completed: 02/04/13

BORING LOG | **B117**
 MW117

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 40 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								<p>Asphalt 6" thick.</p> <p>Boring cleared with a vector truck to a depth of 8' below ground surface (bgs).</p>	
10	50/4"	10	0.0	B117-10	SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (30-55-15).		
15									

Drilling Co./Driller: Cascade Drilling Co./Curtis
Drilling Equipment: HSA LAR
Sampler Type: Split-spoon
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 55 feet bgs
State Well ID No.: BHS 885

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40 to 55 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite Chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 02/04/13
Surface Conditions: Asphalt
Well Location N/S: 96' south of power pole at SE corner of the intersection of Roy and Dexter
Well Location E/W: 12.6' west of power pole at SE corner of the intersection of Roy and Dexter
Reviewed by: CCC
Date Completed: 02/04/13

BORING LOG | **B117**
 MW117

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 40 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	50/5"	33	0.0	B117-15	SM		Moist, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).		
20	50/5"	33	0.0	B117-20	SP-SM		Damp, very dense, medium to fine SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (15-75-10).		
25	50/5"	30	0.0	B117-25	SM		Damp, very dense, silty SAND with gravel, cohesive, light brown, no solvent or hydrocarbon odor (40-50-10).		
30									

Drilling Co./Driller: Cascade Drilling Co./Curtis
Drilling Equipment: HSA LAR
Sampler Type: Split-spoon
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 55 feet bgs
State Well ID No.: BHS 885

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40 to 55 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite Chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 02/04/13
Surface Conditions: Asphalt
Well Location N/S: 96' south of power pole at SE corner of the intersection of Roy and Dexter
Well Location E/W: 12.6' west of power pole at SE corner of the intersection of Roy and Dexter
Reviewed by: CCC
Date Completed: 02/04/13

BORING LOG | **B117**
 MW117

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 40 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	50/5"	30	0.0	B117-30	SM		Wet, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-60-15).		
35	50/5"	30	0.0	B117-35	SM		Moist, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).		
40	50/6"	100	0.0	B117-40	SP-SM		Wet, very dense, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).		
45									

Drilling Co./Driller: Cascade Drilling Co./Curtis
Drilling Equipment: HSA LAR
Sampler Type: Split-spoon
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 55 feet bgs
State Well ID No.: BHS 885

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40 to 55 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite Chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 02/04/13
Surface Conditions: Asphalt
Well Location N/S: 96' south of power pole at SE corner of the intersection of Roy and Dexter
Well Location E/W: 12.6' west of power pole at SE corner of the intersection of Roy and Dexter
Reviewed by: CCC
Date Completed: 02/04/13

BORING LOG | **B117**
 MW117

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 40 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6"	100	0.0	B117-45	SP-SM		Wet, very dense, medium to fine sand with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).		
50	50/5"	30	0.0	B117-50	SM-ML		Moist, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).		
55	50/5"	20	0.0	B117-55	SM ML		Damp, very dense, silty SAND, gray, no solvent or hydrocarbon odor (20-80-0). Damp, very dense, SILT with fine sand, no solvent or hydrocarbon odor (55-45-0).		
60							Boring terminated at 55.5 feet below ground surface. A two-inch diameter well was installed to a depth of 55 feet bgs, screened from 40 to 55 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW117.		

Drilling Co./Driller: Cascade Drilling Co./Curtis
Drilling Equipment: HSA LAR
Sampler Type: Split-spoon
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 55 feet bgs
State Well ID No.: BHS 885

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 40 to 55 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: #2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite Chips
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Asphalt
Well Location N/S: On S property line of vacant lot in sidewalk
Well Location E/W: On Mercer St, 76' E of NE corner of intersection with Dexter Ave N
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B118**
 MW118

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								3 inches of asphalt.	
5	10 15 25		100			SM		Moist, dense, silty fine SAND with medium-large gravel, brown, no solvent or hydrocarbon odor (30-55-15).	
10	32 50/6		100	0.1	B118-10	SM		Moist, very dense, silty fine SAND with gravel, increasing silt with depth, brown, no solvent or hydrocarbon odor (35-55-10).	
15									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BIC 079

Well/Auger Diameter: 2 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Asphalt
Well Location N/S: On S property line of vacant lot in sidewalk
Well Location E/W: On Mercer St, 76' E of NE corner of intersection with Dexter Ave N
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B118**
 MW118

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	26 50/5	150	0.0			SM ML		Moist, very dense, silty fine SAND with some gravel, brown, no solvent or hydrocarbon odor (25-65-10). Moist, hard, fine sandy SILT, gray, no solvent or hydrocarbon odor (80-20-0).	
20	50/6	125	0.0		B118-20	ML SP-SM SM-ML		Moist, hard, fine sandy SILT, gray, no solvent or hydrocarbon odor (80-20-0). Moist to wet, very dense, fine to medium SAND with trace gravel and trace silt, no solvent or hydrocarbon odor (10-85-5). Moist, very dense, fine sandy SILT, gray-brown, no solvent or hydrocarbon odor (60-40-0).	
25	50/6	125	0.1			SM		Moist, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
30									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BIC 079

Well/Auger Diameter: 2 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Asphalt
Well Location N/S: On S property line of vacant lot in sidewalk
Well Location E/W: On Mercer St, 76' E of NE corner of intersection with Dexter Ave N
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B118**
 MW118

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	50/6	125	3.0	B118-30	SM		Moist to wet, very dense, silty fine to medium SAND with lenses of cleaner medium sand, gray, no solvent or hydrocarbon odor (25-75-0).		
35	50/6	150	2.4		SM		Wet, very dense, silty fine to medium SAND with trace fine gravel, gray, no solvent or hydrocarbon odor (20-75-5).		
40	50/6	150		B118-40	SM SM-ML		Wet, very dense, silty fine to medium SAND with trace fine gravel, gray, no solvent or hydrocarbon odor (20-75-5). Moist, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (45-55-0).		
45									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BIC 079

Well/Auger Diameter: 2 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Asphalt
Well Location N/S: On S property line of vacant lot in sidewalk
Well Location E/W: On Mercer St, 76' E of NE corner of intersection with Dexter Ave N
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B118**
 MW118

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/5	125	6.0			SM		Moist to wet, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (35-65-0). Lenses of silty SAND present within sample (30-70-0).	
50	50/5	125	1.2	B118-50	SM		Moist, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (35-60-5).		
55	50/5	125			SM		Moist, very dense, silty fine SAND with trace gravel, gray, no solvent or hydrocarbon odor (35-60-5).		
60							Boring terminated at 55.5 feet below ground surface (bgs). Boring was backfilled with bentonite chips to 50 feet bgs. Two-inch diameter well installed to a depth of 50 feet bgs, screened from 40 to 50 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW118.		

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BIC 079

Well/Auger Diameter: 2 inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Concrete
Well Location N/S: SW corner of intersection of Broad St and 9th Ave N
Well Location E/W:
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B119**
 MW119

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 10 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete cored prior to drilling. Concrete 4 inches thick.	
5	20 18 20		100			SM (FILL)		Moist, dense, silty, gravelly, fine to medium SAND, brown, no solvent or hydrocarbon odor (15-70-15).	
10	4 3 3		100	0.9	B119-10	SM (FILL) ML (FILL)		Moist to wet, loose, gravelly, silty, fine to medium SAND with some coarse sand, gray-brown, no solvent or hydrocarbon odor (15-65-20). Moist, soft, fine sandy SILT with gravel, dark brown, black staining, wood debris, no solvent or hydrocarbon odor (60-30-10).	
15									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BIC 080

Well/Auger Diameter: 2 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Concrete
Well Location N/S: SW corner of intersection of Broad St and 9th Ave N
Well Location E/W:
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B119**
 MW119

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 10 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	16 29 33		100	0.9		SM-ML		Wet, very dense, silty fine SAND with trace gravel, blue-gray, no solvent or hydrocarbon odor (45-50-5).	
20	10 7 10		30	0.9	B119-20	SM		Wet, medium dense, silty fine SAND, organics, wood debris, glass shards, gray, no solvent or hydrocarbon odor (40-60-0).	
25	10 10 10		100	0.7		SM ML		Wet, medium dense, silty fine SAND, organics, wood debris, glass shards, dark brown, no solvent or hydrocarbon odor (35-50-15). Moist, stiff, SILT with fine sand, blue-gray, no solvent or hydrocarbon odor (90-10-0).	
30									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BIC 080

Well/Auger Diameter: 2 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Concrete
Well Location N/S: SW corner of intersection of Broad St and 9th Ave N
Well Location E/W:
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B119**
 MW119

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 10 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	30	50/6	150	0.1	B119-30	SP-SM		Moist, very dense, fine SAND with silt, gray, no solvent or hydrocarbon odor (15-85-0).	
35	13 15 15	100	0.9		SP-SM		Moist to wet, medium dense, fine SAND with silt, gray, no solvent or hydrocarbon odor (15-85-0).		
40	13 15 15	100	0.9	B119-40	SP-SM		Wet, medium dense, fine SAND with some silt, brown, no solvent or hydrocarbon odor (10-90-0).		
45									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BIC 080

Well/Auger Diameter: 2 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: EBF
Date Started: 03/21/13
Surface Conditions: Concrete
Well Location N/S: SW corner of intersection of Broad St and 9th Ave N
Well Location E/W:
Reviewed by: CCC
Date Completed: 03/21/13

BORING LOG | **B119**
 MW119

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 10 feet bgs
Water Depth After Completion feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	28 50/6	125	1.0			SP		Wet, very dense, fine to medium SAND with trace silt, gray to brown, no solvent or hydrocarbon odor (5-95-0).	
50								Boring terminated at 46 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 45 feet bgs, screened from 35 to 45 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW119.	
55									
60									

Drilling Co./Driller: Cascade Drilling/ James
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 300 lbs
Total Boring Depth: 46 feet bgs
Total Well Depth: 45 feet bgs
State Well ID No.: BIC 080

Well/Auger Diameter: 2 inches
Well Screened Interval: 35-45 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Concrete
Well Location N/S: 35' S of N wall
Well Location E/W: 46' E of W wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | DB01

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 27.40 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 6 inches thick at surface.	
5	18 50/6		100	1.3	B-1-05	SP-SM (FILL) SM (FILL)		Damp, very dense, medium to fine SAND with some silt, light brown, no solvent or hydrocarbon odor (10-90-0). Fill material.	
10	2 2 5		100	0.7	B-1-10	SP-SM (FILL)		Moist, loose, medium to fine SAND with silt, brown, no solvent or hydrocarbon odor (10-90-0). Fill material.	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 41 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Concrete
Well Location N/S: 35' S of N wall
Well Location E/W: 46' E of W wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | **DB01**

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 27.40 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	12-15-17		100	0.0	B-1-15	SM		Moist, medium dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (30-50-20).	
20	11-10-9		100	0.0	B-1-20	ML		Wet, medium dense SILT with fine sand and gravel, light brown, no solvent or hydrocarbon odor (50-30-20).	
25	14-20-21		100	0.0	B-1-25	GM SP-SM	 	Moist, dense, silty gravelly SAND, brown, no solvent or hydrocarbon odor (15-35-50). Moist, dense, medium fine SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (10-60-30).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 41 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Concrete
Well Location N/S: 35' S of N wall
Well Location E/W: 46' E of W wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | DB01

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 27.40 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	0.1	B-1-30	SM		Wet, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-55-20).	
35		50/6	50	0.1	B-1-35	ML		Wet, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-40-10).	
40		50/6	50	0.4	B-1-40	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-40-10).	
45								Boring terminated at 41 feet below ground surface (bgs). Refusal due to large rock. A temporary well set with screen from 35-40 feet bgs. Backfilled with bentonite chips.	

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 41 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Asphalt
Well Location N/S: 27.0' S of N wall
Well Location E/W: 156.9' E of west wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | DB02

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Asphalt at surface.	
5	1 2 2		100	0.0	B-2-05	ML (FILL)		Wet, soft SILT with gravel and fine sand, olive gray, no solvent or hydrocarbon odor. Black wood ash in bottom 3 inches (55-40-5). Fill material.	
10	3 5 5		100	0.0	B-2-10	ML (FILL)		Moist, stiff SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (50-45-5). Fill material.	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Asphalt
Well Location N/S: 27.0' S of N wall
Well Location E/W: 156.9' E of west wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | DB02

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	4 5 5		100	0.1	B-2-15	SP-SM SM		Moist, loose, fine to medium SAND with silt, dark gray, no solvent or hydrocarbon odor (10-90-0). Moist, loose, silty fine SAND, dark gray, no solvent or hydrocarbon odor (35-65-0).	
20	5 15 18		100	4.8	B-2-20	SM		Moist, medium dense, silty medium to fine SAND with trace gravel, brown, no solvent or hydrocarbon odor (20-75-5) Damp, medium dense, silty fine to medium SAND, brown, no solvent or hydrocarbon odor (25-75-0).	
25	15 50/6		1	0.7	B-2-25	GM		Wet, very dense, GRAVEL with silt and sand, dark brown.	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Asphalt
Well Location N/S: 27.0' S of N wall
Well Location E/W: 156.9' E of west wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | DB02

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
Water Depth After Completion 17 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	15 25 25		5	--	B-2-30	GM		Wet, dense, silty gravelly SAND, brown, no solvent or hydrocarbon odor.	
35	50/6		100	0.1	B-2-35	GM		Wet, very dense, silty gravelly SAND, brown, no solvent or hydrocarbon odor (25-25-50).	
40	50/6		100	0.1	B-2-40	SM-ML		Damp, very dense, silty SAND with gravel, dark gray, cohesive, no hydrocarbon odor (40-40-20).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/18/2013
Surface Conditions: Asphalt
Well Location N/S: 27.0' S of N wall
Well Location E/W: 156.9' E of west wall
Reviewed by: CCC
Date Completed: 3/18/2013

BORING LOG | DB02

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 25 feet bgs
 Water Depth After Completion 17 feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	X	50/5	40	1.3	B-2-45	SM		Damp, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor.	
50								<p>Boring terminated at 46.5 feet below ground surface (bgs). A temporary well set with screen from 35 - 40 feet bgs. Collect water sample 20130318-B-2. Remove temporary casing and backfilled with bentonite chips. Finish with concrete.</p>	
55									
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.: --

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Asphalt
Well Location N/S: 62' N of former building drive
Well Location E/W: 46' W of E property boundary
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | **DB03**

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling 60 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Asphalt at surface.	
5	3 4 3		100	0.5	DB03-05	SM (FILL)		Damp, loose, silty SAND with gravel, brown, no solvent or hydrocarbon odor (15-80-5). Fill material.	
10	4 7 7		100	0.0	Not Sampled	GM (FILL)		Wet, medium dense, gravelly SILT with bricks, black, no solvent or hydrocarbon odor (10-10-80). Fill material.	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: BC1076

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Asphalt
Well Location N/S: 62' N of former building drive
Well Location E/W: 46' W of E property boundary
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB03

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 60 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	3 5 9		100	0.0	DB03-15	SM (FILL)		Wet, loose, silty SAND with gravel, black, wood ash and metal debris, no solvent or hydrocarbon odor (20-65-15). Fill material.	
20	7 7 7		100	0.5	DB03-20	ML		Damp, medium dense SILT with fine sand, greenish gray, no solvent or hydrocarbon odor (60-40-0).	
25	6 7 7		100	0.5	DB03-25	SM		Wet, medium dense, silty medium SAND with gravel, dark gray, no solvent or hydrocarbon odor (40-50-10).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: BC1076

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Asphalt
Well Location N/S: 62' N of former building drive
Well Location E/W: 46' W of E property boundary
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB03

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 60 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	10 10 10		100	0.5	DB03-30	ML		Wet, very stiff SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0).	
35	3 4 5		100	0.5	DB03-35	ML		Moist, medium stiff SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0).	
40	4 6 7		100	11.1	DB03-40	ML		Moist, stiff SILT with fine sand, brown and gray, no solvent or hydrocarbon odor (60-40-0).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: BC1076

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Asphalt
Well Location N/S: 62' N of former building drive
Well Location E/W: 46' W of E property boundary
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB03

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 60 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	10 50/6	75	14.2	DB03-45	SM		Wet, very dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (35-50-15).		
50	50/6	50	8.9	DB03-50	SM		Wet, very dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20).		
55	60/5	50	46.0	DB03-55	SM		Wet, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-55-45).		
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: BC1076

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:

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Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Asphalt
Well Location N/S: 62' N of former building drive
Well Location E/W: 46' W of E property boundary
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB03

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 60 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	X	50/6	50	4.7	DB03-60	SM		Wet, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-55-5). Boring terminated at 60.5 feet below ground surface(bgs). Set temperature monitoring point. Collect water sample 20130327-DB03-60.	
65									
70									
75									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: BC1076

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/21/2013
Surface Conditions: Concrete
Well Location N/S: 84' S of N wall
Well Location E/W: 51' E of N wall
Reviewed by: CCC
Date Completed: 3/21/2013

BORING LOG | DB04

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete at surface.	
5	7 15 20		100	1.6	DB04-05	GM-GP		Damp, dense, sandy GRAVEL with silt, brown, no solvent or hydrocarbon odor (10-30-60).	
10	15 18 20		100	3.7	DB04-10	SM		Moist, dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (35-50-15).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/21/2013
Surface Conditions: Concrete
Well Location N/S: 84' S of N wall
Well Location E/W: 51' E of N wall
Reviewed by: CCC
Date Completed: 3/21/2013

BORING LOG | DB04

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	7 9 9		100	1.6	DB04-15	SM		Wet, loose, silty SAND, light brown, no solvent or hydrocarbon odor (35-65-0).	
20	12 12 12		100	45.9	DB04-20	SP-SM		Damp, medium dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (15-65-20).	
25	12 12 20		100	18.9	DB04-25	ML-GM		Wet, medium dense, gravelly SILT with sand, light brown, no solvent or hydrocarbon odor (45-15-40).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/21/2013
Surface Conditions: Concrete
Well Location N/S: 84' S of N wall
Well Location E/W: 51' E of N wall
Reviewed by: CCC
Date Completed: 3/21/2013

BORING LOG | DB04

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	54.8	DB04-30	SM		Damp, very dense, silty SAND, gray, no solvent or hydrocarbon odor (30-70-0).	
35		50/6	50	98.6	DB04-35	ML		Damp, hard SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (55-40-5).	
40		50/6	50	27.5	DB04-40	ML		Damp, hard SILT with fine sand and trace gravel, cohesive, gray, no solvent or hydrocarbon odor (55-40-5).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/21/2013
Surface Conditions: Concrete
Well Location N/S: 84' S of N wall
Well Location E/W: 51' E of N wall
Reviewed by: CCC
Date Completed: 3/21/2013

BORING LOG | DB04

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/5	50	50	17.8	DB04-45	ML		Damp, hard SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (55-40-5). Set conductor at 45 feet bgs.	
50	50/6	50	50	0.8	DB04-50	ML		Damp, very dense SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-35-15).	
55	50/6	50	50	0.8	DB04-55	SM		Wet, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/21/2013
Surface Conditions: Concrete
Well Location N/S: 84' S of N wall
Well Location E/W: 51' E of N wall
Reviewed by: CCC
Date Completed: 3/21/2013

BORING LOG | DB04

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	X	50/6	50	0.8	DB04-60	ML		Damp, very dense SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-35-15). Boring terminated at 60.5 feet below ground surface (bgs). Set temporary well at 60 feet bgs. Collected water sample 20130322-DB04-60.	
65									
70									
75									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 60.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 12.5' N of S wall
Well Location E/W: 65.5' E of W wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB05

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 6 inches thick at surface.	
5	20 25 20		80	1.0	DB05-05	SP-SM		Damp, dense, medium to fine SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (10-80-10).	
10	14 23 24		100	0.6	DB05-10	SM		Damp, dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (25-70-5).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 12.5' N of S wall
Well Location E/W: 65.5' E of W wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB05

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15		50/2	30	0.6	DB05-15	SM		Damp, very dense, silty SAND, light brown, no solvent or hydrocarbon odor (35-65-0).	
20		50/6	30	1.9	DB05-20	ML-SM		Damp, very dense, silty SAND with gravel, cohesive, light brown, no solvent or hydrocarbon odor (40-45-15).	
25		50/6	50	3.3	DB05-25	ML-SM		Moist, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (40-45-15).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 12.5' N of S wall
Well Location E/W: 65.5' E of W wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB05

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/5	50	8.0	DB05-30	SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
35		50/6	50	24.1	DB05-35	SM-ML		Moist, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (45-45-10).	
40		50/5	50	139.1	DB05-40	ML		Damp, hard, fine sandy SILT with gravel, cohesive, gray, no solvent or hydrocarbon odor (55-35-10).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 12.5' N of S wall
Well Location E/W: 65.5' E of W wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB05

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/4	50	50	11.7	DB05-45	ML		Damp, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (55-45-0).	
50	50/5	50	50	0.9	DB05-50	SM		Moist, very dense, silty medium SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
55	50/6	55	55	0.9	DB05-55	SM		Damp, very dense, silty medium SAND with gravel, gray, no solvent or hydrocarbon odor (40-50-10).	
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 12.5' N of S wall
Well Location E/W: 65.5' E of W wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB05

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60		50/6	55	0.0	DB05-60	ML		Damp, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-35-15).	
65		50/6	50	0.0	DB05-65	SP-SM		Moist to wet, very dense, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).	
70		50/6	50	0.0	DB05-70	ML		Damp, hard SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (70-25-5). Collect water sample 20130326-DB05-70.	
75								Boring terminated at 70.5 feet below ground surface (bgs).	

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/25/2013
Surface Conditions: Concrete
Well Location N/S: 39' N of S wall
Well Location E/W: 90' E of W wall
Reviewed by: CCC
Date Completed: 3/25/2013

BORING LOG | DB06

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								6" concrete surfacing.	
5	3 3 3		100	0.4	DB06-05	SM (FILL)		Damp, loose, silty SAND, brown, no solvent or hydrocarbon odor (30-70-0). Fill material.	
10	8 8 8		100	0.4	DB06-10	SM (FILL)		Damp, medium dense, silty SAND, brown, no solvent or hydrocarbon odor (45-55-0). Fill material.	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BC1074

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: Sand
Surface Seal: Concrete
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/25/2013
Surface Conditions: Concrete
Well Location N/S: 39' N of S wall
Well Location E/W: 90' E of W wall
Reviewed by: CCC
Date Completed: 3/25/2013

BORING LOG | DB06

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	11 12 16		100	0.4	DB06-15	SM		Damp, medium dense, silty medium SAND, light brown, no solvent or hydrocarbon odor (40-60-0).	
20	50/6		50	0.4	DB06-20	SM		Damp, very dense, silty SAND with trace gravel, brown, no solvent or hydrocarbon odor (35-60-5).	
25	50/5		50	4.9	DB06-25	SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-55-10).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BC1074

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: Sand
Surface Seal: Concrete
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:

Page: | **2 of 6**



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/25/2013
Surface Conditions: Concrete
Well Location N/S: 39' N of S wall
Well Location E/W: 90' E of W wall
Reviewed by: CCC
Date Completed: 3/25/2013

BORING LOG | DB06

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/5	50	4.9	DB06-30	SM		Wet, very dense, silty SAND, gray, no solvent or hydrocarbon odor (30-70-0).	
35		50/6	50	14.0	DB06-35	ML		Damp, hard SILT with sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (55-35-10).	
40		50/5	50	1.3	DB06-40	SM		Damp, very dense, silty fine SAND, gray, no solvent or hydrocarbon odor (30-70-0).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BC1074

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: Sand
Surface Seal: Concrete
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/25/2013
Surface Conditions: Concrete
Well Location N/S: 39' N of S wall
Well Location E/W: 90' E of W wall
Reviewed by: CCC
Date Completed: 3/25/2013

BORING LOG | DB06

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	50	2.2	DB06-45	SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).	
50		50/3	30	0.4	DB06-50	ML		Damp, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (55-35-10).	
55		50/6	55	0.4	DB06-55	ML		Damp, hard SILT with fine sand and trace gravel, dark gray, no solvent or hydrocarbon odor (55-40-5).	
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BC1074

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: Sand
Surface Seal: Concrete
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/25/2013
Surface Conditions: Concrete
Well Location N/S: 39' N of S wall
Well Location E/W: 90' E of W wall
Reviewed by: CCC
Date Completed: 3/25/2013

BORING LOG | DB06

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60		50/5	50	0.4	DB06-60	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (55-30-15).	
65		50/3	50	0.9	DB06-65	SM		Damp, very dense, silty SAND with gravel, dark gray, no solvent or hydrocarbon odor (40-45-15).	
70		50/6	50	0.4	DB06-70	ML		Damp, hard SILT with fine sand and gravel, cohesive, dark gray, no solvent or hydrocarbon odor (60-25-15).	
75									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BC1074

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: Sand
Surface Seal: Concrete
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/25/2013
Surface Conditions: Concrete
Well Location N/S: 39' N of S wall
Well Location E/W: 90' E of W wall
Reviewed by: CCC
Date Completed: 3/25/2013

BORING LOG | DB06

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75		50/6	50	2.2	DB06-75	ML		Moist to wet, hard SILT with fine sand, dark gray, no solvent or hydrocarbon odor (75-25-0).	
80		50/6	50	0.9	DB06-80	ML		Damp, hard SILT with fine sand and gravel, dark gray, no solvent or hydrocarbon odor (60-30-10).	
85								Boring terminated at 80.5 feet below ground surface (bgs). Set temperature monitoring point. Collect water sample 20130325-DB06-80.	
90									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80.5 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BC1074

Well/Auger Diameter: 2/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: Sand
Surface Seal: Concrete
Annular Seal: Portland Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Concrete
Well Location N/S: 33' S of roll-up door
Well Location E/W: 127' E of W wall
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB07

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								1.5 feet Concrete surfacing.	
5	2 8 8		100	3.7	DB07-05	SM		Moist, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (35-55-10).	
10	7 8 10		100	6.8	DB07-10	SM		Wet, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (25-55-20).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Concrete
Well Location N/S: 33' S of roll-up door
Well Location E/W: 127' E of W wall
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | **DB07**

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	10 10 10	100	68.1	DB07-15	SM		Wet, medium dense, silty medium SAND, brown, no solvent or hydrocarbon odor (30-70-0).		
20	22 10 10	100	24.8	DB07-20	SM		Wet, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (35-50-15).		
25	50/6	50	39.6	DB07-25	SM		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-60-5).		
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Concrete
Well Location N/S: 33' S of roll-up door
Well Location E/W: 127' E of W wall
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB07

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6			DB07-30			No recovery.	
35		50/6	100	14.0	DB07-35	SM		Wet, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (35-50-15).	
40		50/6	50	5.2	DB07-40	SM-ML		Wet, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor (40-45-15).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Concrete
Well Location N/S: 33' S of roll-up door
Well Location E/W: 127' E of W wall
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB07

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	30	23.6	DB07-45	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (40-50-10).	
50		50/3	30	5.2	DB07-50	SM		Wet, very dense, silty SAND with gravel, gray (40-50-10). Sluff.	
55		50/3	0	--				No recovery.	
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/27/2013
Surface Conditions: Concrete
Well Location N/S: 33' S of roll-up door
Well Location E/W: 127' E of W wall
Reviewed by: CCC
Date Completed: 3/27/2013

BORING LOG | DB07

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60		50/3	30	1.7	DB07-60	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (60-30-10).	
65		50/5	50	7.0	DB07-65	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (60-30-10).	
70		50/4	50	6.1	DB07-70	ML		Damp, hard SILT with fine sand and gravel, gray, cohesive, no solvent or hydrocarbon odor (60-30-10).	
75								Boring terminated at 70.5 feet below ground surface (bgs). Collected water sample 20130328-DB07-70.	

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 27' N of S wall
Well Location E/W: 90' W of E wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB08

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 6 inches thick at surface.	
5	7 14 9		100	0.7	DB08-05	SP-SM (FILL)		Damp, medium dense, medium to fine SAND with silt, rust color, no solvent or hydrocarbon odor (10-90-0). Fill material.	
10	50/6		50	0.7	DB08-10	SM		Damp, very dense, silty SAND with trace gravel, brown, no solvent or hydrocarbon odor (20-75-5).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.: BC1072

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Portland Cement grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 27' N of S wall
Well Location E/W: 90' W of E wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB08

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15		50/5	30	1.5	DB08-15	SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (35-60-5).	
20		50/6	50	11.7	DB08-20	SM-ML		Damp, very dense SILT with sand and gravel, gray, no solvent or hydrocarbon odor (50-45-5).	
25		50/6	50	0.7	DB08-25	ML		Moist, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.: BC1072

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Portland Cement grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 27' N of S wall
Well Location E/W: 90' W of E wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB08

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	14.6	DB08-30	ML		Moist, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (65-35-0).	
35		50/5	50	30.6	DB08-35	SM		Wet, very dense, silty medium SAND with gravel, gray, no solvent or hydrocarbon odor (35-60-15).	
40		50/6	15	0.0	DB08-40	SM		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (25-65-10).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.: BC1072

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Portland Cement grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 27' N of S wall
Well Location E/W: 90' W of E wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB08

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6	50	0.7	DB08-45	SM		Damp, very dense, silty fine SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).		
50	50/5	50	13.5	DB08-50	SM		Wet, very dense, silty medium SAND with gravel, gray, no solvent or hydrocarbon odor (20-70-10).		
55	50/5	20	3.7	DB08-55	SM		Wet, very dense, silty medium SAND with gravel, gray, no solvent or hydrocarbon odor (20-70-10).		
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.: BC1072

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Portland Cement grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/20/2013
Surface Conditions: Concrete
Well Location N/S: 27' N of S wall
Well Location E/W: 90' W of E wall
Reviewed by: CCC
Date Completed: 3/20/2013

BORING LOG | DB08

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	X	50/5	20	4.8	DB08-60	ML		Damp, hard SILT with medium and fine sand, gray, no solvent or hydrocarbon odor (65-35-0). Collect water sample 20130321-DB08-60 at 60' bgs.	
65	X	50/6	50	7.0	DB08-65	ML		Moist, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (55-45-0).	
70	X	50/6	20	2.7	DB08-70	ML		Moist, hard silty fine SAND, trace gravel, gray, cohesive, no solvent or hydrocarbon odor (55-40-5).	
75								Boring terminated at 70.5 feet below ground surface (bgs). Set temperature monitoring point at 70' bgs.	

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.: BC1072

Well/Auger Diameter: 1/4.25/10.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Portland Cement grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/19/2013
Surface Conditions: Concrete
Well Location N/S: 27.5' N of S wall
Well Location E/W: 36' W of E wall
Reviewed by: CCC
Date Completed: 3/19/2013

BORING LOG | DB09

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete at surface.	
5	2 1 2		100	0.0	DB09-05	SM (FILL)		Damp, very loose, silty SAND with gravel and brick fragments, dark brown, no solvent or hydrocarbon odor (25-65-10). Fill material.	
10	5 7 9		100	0.0	DB09-10	SM (FILL)		Damp, medium dense, silty SAND with gravel and brick fragments, dark brown, no solvent or hydrocarbon odor (25-65-10). Fill material.	
15								FILL	

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.8 feet bgs
Total Well Depth: 70.5 feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/19/2013
Surface Conditions: Concrete
Well Location N/S: 27.5' N of S wall
Well Location E/W: 36' W of E wall
Reviewed by: CCC
Date Completed: 3/19/2013

BORING LOG | DB09

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15		50/6	30	0.0	DB09-15	SM		Wet, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (30-60-10).	
20		10 8 6	100	0.0	DB09-20	SM		Wet, medium dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-60-15).	
25		17 50/6	50	0.0	DB09-25	SM		Wet, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (35-55-10).	
30									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.8 feet bgs
Total Well Depth: 70.5 feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/19/2013
Surface Conditions: Concrete
Well Location N/S: 27.5' N of S wall
Well Location E/W: 36' W of E wall
Reviewed by: CCC
Date Completed: 3/19/2013

BORING LOG | DB09

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	60	0.0	DB09-30	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (30-55-15).	
35		50/6	50	0.0	DB09-35	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (25-65-10).	
40		50/2	10	0.0	DB09-40	SM		Collected water sample 20130319-DB09-40. Damp, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (30-60-10).	
45									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.8 feet bgs
Total Well Depth: 70.5 feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/19/2013
Surface Conditions: Concrete
Well Location N/S: 27.5' N of S wall
Well Location E/W: 36' W of E wall
Reviewed by: CCC
Date Completed: 3/19/2013

BORING LOG | DB09

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	50	0.0	DB09-45	SM		Moist, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (35-60-5).	
50		50/4	30	0.0	DB09-50	SM		Moist, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (30-60-5).	
55		50/6	25	0.0	DB09-55	ML		Damp, hard, SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-45-5).	
60									

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.8 feet bgs
Total Well Depth: 70.5 feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/19/2013
Surface Conditions: Concrete
Well Location N/S: 27.5' N of S wall
Well Location E/W: 36' W of E wall
Reviewed by: CCC
Date Completed: 3/19/2013

BORING LOG | DB09

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60		50/6	50	0.0	DB09-60	ML		Damp, hard SILT with fine sand and trace gravel, cohesive, gray, no solvent or hydrocarbon odor (55-40-5).	
65		50/6	50	0.0	DB09-65	ML		Damp, hard SILT with fine sand and trace gravel, cohesive, gray, no solvent or hydrocarbon odor (55-40-5).	
70		50/6	50	0.0	DB09-70	ML		Damp, hard SILT with fine sand and gravel, cohesive, dark gray, no solvent or hydrocarbon odor (50-40-10).	
75								Boring terminated at 70 feet below ground surface (bgs). Set temperature monitoring point at 70 feet bgs.	

Drilling Co./Driller: Cascade
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.8 feet bgs
Total Well Depth: 70.5 feet bgs
State Well ID No.: --

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Grout
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/24/2013
Surface Conditions: Concrete
Well Location N/S: 180' S of N wall
Well Location E/W: 19' E of W wall
Reviewed by: CCC
Date Completed: 3/24/2013

BORING LOG | DB10

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 6 inches thick at surface.	
5	2 2 6		100	0.5	DB10-05	SM (FILL)		Moist, loose, silty SAND with gravel, brown, no hydrocarbon odor (25-65-10). Fill material.	
10	9 9 9		100	6.8	DB10-10	SM-ML		Wet, medium dense, silty SAND with gravel, brown, no hydrocarbon odor (45-45-10).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/24/2013
Surface Conditions: Concrete
Well Location N/S: 180' S of N wall
Well Location E/W: 19' E of W wall
Reviewed by: CCC
Date Completed: 3/24/2013

BORING LOG | **DB10**

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15		50/6	50	65.7	DB10-15	SM-ML		Moist, very dense, silty SAND with gravel, brown, cohesive, no solvent or hydrocarbon odor (40-45-15).	
20		50/6	50	120.5	DB10-20	ML		Damp, hard SILT with fine sand and trace gravel, gray, no solvent or hydrocarbon odor (55-40-5).	
25		50/6	50	4.7	DB10-25	SM-ML		Damp, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (40-45-15).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/24/2013
Surface Conditions: Concrete
Well Location N/S: 180' S of N wall
Well Location E/W: 19' E of W wall
Reviewed by: CCC
Date Completed: 3/24/2013

BORING LOG | DB10

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	396	DB10-30	ML		Damp, hard SILT with fine sand, cohesive, gray, solvent odor (55-40-5).	
35		50/6	50	2,493	DB10-35	ML		Damp, hard SILT with fine sand, cohesive, gray, solvent odor (55-40-5).	
40		50/6	50	92.1	DB10-40	ML		Moist, hard SILT with fine sand and trace gravel, gray, solvent odor. Collected water sample 20130329-DB10-40. Set conductor casing at 40 feet bgs.	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/24/2013
Surface Conditions: Concrete
Well Location N/S: 180' S of N wall
Well Location E/W: 19' E of W wall
Reviewed by: CCC
Date Completed: 3/24/2013

BORING LOG | DB10

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6	50	82.6	DB10-45	SP-SM		Wet, very dense, medium to fine SAND with gravel and silt, gray, solvent odor (10-80-10).		
50	50/3	30	425	DB10-50	ML		Damp, hard SILT with fine sand, cohesive, gray, solvent odor (65-35-0).		
55	50/6	50	23.0	DB10-55	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (55-40-5).		
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 3/24/2013
Surface Conditions: Concrete
Well Location N/S: 180' S of N wall
Well Location E/W: 19' E of W wall
Reviewed by: CCC
Date Completed: 3/24/2013

BORING LOG | DB10

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60		50/5	50	28.9	DB10-60	ML		Damp, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (55-45-0).	
65		50/6	50	16.1	DB10-65	ML		Damp, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0).	
70		50/6	50	6.3	DB10-70	ML		Damp to moist, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (50-50-0).	
75								Boring terminated at 70.5 feet below ground surface (bgs). Collected water sample 20130401-DB10-70.	

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: 1/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/02/2013
Surface Conditions: Concrete
Well Location N/S: 18.5' N of S wall
Well Location E/W: 14' E of W wall
Reviewed by: CCC
Date Completed: 04/02/2013

BORING LOG | DB11

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								6" Concrete surfacing.	
5	7 1 15		100	0.0	DB11-05	SM		Damp, medium dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (15-70-15).	
10	50/6		50	0.0	DB11-10	SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (20-65-15).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/02/2013
Surface Conditions: Concrete
Well Location N/S: 18.5' N of S wall
Well Location E/W: 14' E of W wall
Reviewed by: CCC
Date Completed: 04/02/2013

BORING LOG | DB11

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	43 50/5	75	0.0	DB11-15	SM		Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (15-75-10).		
20	31 50/3	50	0.6	DB11-20	SM		Moist, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (40-50-10).		
25	50/6	50	2.4	DB11-25	SM		Moist, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon (40-50-10).		
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/02/2013
Surface Conditions: Concrete
Well Location N/S: 18.5' N of S wall
Well Location E/W: 14' E of W wall
Reviewed by: CCC
Date Completed: 04/02/2013

BORING LOG | DB11

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	0.6	DB11-30	ML		Moist, hard SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0).	
35		50/6	50	0.6	DB11-35	ML		Moist, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-40-10).	
40		50/5	50	0.0	DB11-40	ML		Damp, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-40-10).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/02/2013
Surface Conditions: Concrete
Well Location N/S: 18.5' N of S wall
Well Location E/W: 14' E of W wall
Reviewed by: CCC
Date Completed: 04/02/2013

BORING LOG | DB11

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	50	24.6	DB11-45	SM		Wet, very dense, silty medium to fine SAND with gravel, gray, no solvent or hydrocarbon odor (15-75-10).	
50		50/6	50	0.4	DB11-50	ML		Moist, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-40-10).	
55		50/6	50	0.4	DB11-55	ML		Damp, hard SILT with fine sand and gravel, gray, no solvent or hydrocarbon odor (50-40-10).	
60								Boring terminated at 55.5 feet below ground surface (bgs). Temporary well set from 50 to 55 feet bgs. Collect groundwater sample 20130402-DB11-55.	

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 55.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 89' S of N wall
Well Location E/W: 117' E of W wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB12

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								6" Concrete surfacing.	
5	10 10 10		100	0.0	DB12-05	SP (FILL)		Damp, medium dense, medium to fine SAND with silt, brown, no solvent or hydrocarbon odor (10-90-0). Fill material.	
10	10 10 11		100	112	DB12-10	SP (FILL)		Damp, medium dense, medium to fine SAND with silt and gravel, brown, no solvent or hydrocarbon odor (10-80-10). Fill material.	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 89' S of N wall
Well Location E/W: 117' E of W wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB12

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	3 5 8		100	110.9	DB12-15	SM		Wet, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20). Set temporary screen at 15 feet bgs. Collected water sample 20130403-DB12-15.	
20	9 9 9		100	82.0	DB12-20	ML		Moist, very stiff, SILT with fine sand, gray with brown mottling, no solvent or hydrocarbon odor (60-40-0).	
25	7 6 5		100	75.1	DB12-25	ML		Moist, stiff, SILT with fine sand, brown, no solvent or hydrocarbon odor (60-40-0).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 89' S of N wall
Well Location E/W: 117' E of W wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB12

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	7 8 10		100	65.1	DB12-30	SM		Moist, medium dense, silty medium SAND with gravel, brown, no solvent or hydrocarbon odor (30-50-20).	
35	3 3 5		100	13.4	DB12-35	SM-GM		Wet, loose, silty sandy GRAVEL, brown, no solvent or hydrocarbon odor (30-40-30).	
40	50/6		50	51.5	DB12-40	SP-SM		Wet, very dense, medium to fine SAND with silt and trace gravel, gray, no solvent or hydrocarbon odor (10-85-5).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 89' S of N wall
Well Location E/W: 117' E of W wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB12

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	X	50/6	50	75.1	DB12-45	SM		Damp, very dense, silty SAND with gravel, gray, no hydrocarbon odor (35-50-15). Set temporary screen from 40 to 45 feet bgs. Collected water sample 20130403-DB12-45. Boring terminated at 45.5 feet below ground surface (bgs).	
50									
55									
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 45.8' N of S wall
Well Location E/W: 63.8' W of E wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB13

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								6" Concrete surfacing.	
5	1 2 3		100	0.0	DB13-05	ML		Moist, medium stiff, silty fine SAND and gravel, brown, no solvent or hydrocarbon odor (50-40-10).	
10	7 8 9		100	0.4	DB13-10	ML		Moist, very stiff, SILT with fine sand and gravel, brown, no solvent or hydrocarbon odor (60-30-10).	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 45.8' N of S wall
Well Location E/W: 63.8' W of E wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB13

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	10 10 10		100	0.6	DB13-15	SM		Wet, medium dense, silty SAND with gravel, brown, no solvent or hydrocarbon odor (35-55-10). Set temporary well at 15' bgs. Collected water sample 20130403-DB13-15.	
20	14 15 15		100	4.4	DB13-20	SM		Damp, medium dense, silty SAND with gravel, brown, cohesive, no solvent or hydrocarbon odor (35-55-10).	
25	50/6		50	NR	DB13-25			No recovery.	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 45.8' N of S wall
Well Location E/W: 63.8' W of E wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB13

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	18.4	DB13-30	SM		Damp, very dense, silty SAND with gravel, gray, cohesive, no solvent or hydrocarbon odor (35-55-10).	
35		50/6	50	40.2	DB13-35	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-40-10).	
40		50/6	50	3.4	DB13-40	ML		Damp, hard SILT with fine sand and gravel, cohesive, gray, no solvent or hydrocarbon odor (50-40-10).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/03/2013
Surface Conditions: Concrete
Well Location N/S: 45.8' N of S wall
Well Location E/W: 63.8' W of E wall
Reviewed by: CCC
Date Completed: 04/03/2013

BORING LOG | DB13

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	X	50/6	50	2.0	DB13-45	ML		Moist, hard, silty fine SAND and gravel, gray, no solvent or hydrocarbon odor (50-40-10). Collected water sample 20130403-DB13-45. Boring terminated at 45.5 feet below ground surface (bgs).	-----
50									
55									
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 45.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: --
Annular Seal: --
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/04/2013
Surface Conditions: Asphalt
Well Location N/S: 26' S of N property boundary
Well Location E/W: 37' W of E property boundary
Reviewed by: CCC
Date Completed: 04/04/2013

BORING LOG | **DB14**

Site Address: 700 Dexter Avenue North
 Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								4" Asphalt surfacing.	
5		3 3 3	100		DB14-05	ML (FILL)		Moist, loose, SILT with fine sand, gray, no solvent or hydrocarbon odor (60-40-0). Fill material.	
10		1 2 3	100		DB14-10	ML (FILL)		Wet, loose, SILT with fine sand and trace gravel, wood waste, black, moderate hydrocarbon odor. Fill material.	
15									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/04/2013
Surface Conditions: Asphalt
Well Location N/S: 26' S of N property boundary
Well Location E/W: 37' W of E property boundary
Reviewed by: CCC
Date Completed: 04/04/2013

BORING LOG | DB14

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	2 2 2		100		DB14-15	SM (FILL)		Wet, very loose, silty SAND with gravel wood waste and miscellaneous debris, black, hydrocarbon odor (25-65-10). Fill material. Set temporary well and collected water sample 20130404-DB14-15	
20	2 3 4		50		DB14-20	ML (FILL)		Wet, loose, SILT with fine sand gravel and miscellaneous debris, black, slight hydrocarbon odor (60-35-5). Fill material.	
25	4 8 14		100		DB14-25	ML		Moist, very stiff, SILT with fine sand, greenish gray, no solvent or hydrocarbon odor (55-45-0).	
30									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/04/2013
Surface Conditions: Asphalt
Well Location N/S: 26' S of N property boundary
Well Location E/W: 37' W of E property boundary
Reviewed by: CCC
Date Completed: 04/04/2013

BORING LOG | DB14

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	14 50/6	50			DB14-30	ML		Damp, very dense SILT with fine sand, light brown, no solvent or hydrocarbon odor (55-45-0).	
35	7 10 12	100			DB14-35	SM		Wet, very dense, silty SAND with trace gravel, gray, no solvent or hydrocarbon odor (35-60-5).	
40	14 14 14	100			DB14-40	SP-SM		Wet, medium dense, medium to fine SAND with silt, gray, no solvent or hydrocarbon odor (10-90-0).	
45									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 04/04/2013
Surface Conditions: Asphalt
Well Location N/S: 26' S of N property boundary
Well Location E/W: 37' W of E property boundary
Reviewed by: CCC
Date Completed: 04/04/2013

BORING LOG | DB14

Site Address: 700 Dexter Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	11 20 40	100			DB14-45	SM		Moist, very dense, silty SAND, gray, no solvent or hydrocarbon odor (35-65-0). Set temporary well at 45 feet bgs and collected water sample 20130404-DB14-45.	
								Boring terminated at 46.5 feet below ground surface (bgs).	
50									
55									
60									

Drilling Co./Driller: Cascade/David
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 46.5 feet bgs
Total Well Depth: -- feet bgs
State Well ID No.: --

Well/Auger Diameter: --/4.25 inches
Well Screened Interval: -- feet bgs
Screen Slot Size: -- inches
Filter Pack Used: --
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: --

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 10"-thick.	
5	13 15 17		100	0.0		SM		Damp, loose, silty SAND with gravel, brown, no hydrocarbon odor (30-55-15).	
10	10 11 15		100	0.0	B120-10	SM		Damp, loose, silty SAND with gravel, brown with gray spots, no hydrocarbon odor (35-55-10).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	2 6 7		100	0.4		SM		Wet to moist, loose, silty SAND, trace gravel, gray, no hydrocarbon odor (35-60-5).	
20	2 3 5		20	0.0	B120-20	ML		Wet, loose, silty with fine SAND and trace gravel, gray, no hydrocarbon odor (60-35-5).	
25	16 16 19		0				Driller reports very dense at 24' bgs. No recovery.		
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	33	0.0	B120-30	SP		Wet, very dense, fine to medium SAND with trace silty and gravel, no hydrocarbon odor (10-85-5).	
35		50/6	100	0.0		GP		Wet, very dense, fine GRAVEL with sand and silt, brown, no hydrocarbon odor (10-20-70).	
						SP		Wet, very dense, medium to fine SAND with silt, brown, no hydrocarbon odor (10-90-0).	
40		50/6	0				No recovery.		
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	33	0.0	B120-45	ML		Wet, very dense, silt with fine SAND and gravel, gray, no hydrocarbon odor with wood ash (60-35-5).	
50		50/6	33	0.0	B120-50	ML		Wet, very dense, SILT with fine sand and gravel, gray, no hydrocarbon odor (60-35-5).	
55								Boring terminated at 50.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 50 feet bgs, screened from 40 to 50 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW120.	
60									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 10"-thick.	
5	13 15 17		100	0.0		SM		Damp, loose, silty SAND with gravel, brown, no hydrocarbon odor (30-55-15).	
10	10 11 15		100	0.0	B120-10	SM		Damp, loose, silty SAND with gravel, brown with gray spots, no hydrocarbon odor (35-55-10).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	2 6 7		100	0.4		SM		Wet to moist, loose, silty SAND, trace gravel, gray, no hydrocarbon odor (35-60-5).	
20	2 3 5		20	0.0	B120-20	ML		Wet, loose, silty with fine SAND and trace gravel, gray, no hydrocarbon odor (60-35-5).	
25	16 16 19		0				Driller reports very dense at 24' bgs. No recovery.		
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	33	0.0	B120-30	SP		Wet, very dense, fine to medium SAND with trace silty and gravel, no hydrocarbon odor (10-85-5).	
35		50/6	100	0.0		GP		Wet, very dense, fine GRAVEL with sand and silt, brown, no hydrocarbon odor (10-20-70).	
						SP		Wet, very dense, medium to fine SAND with silt, brown, no hydrocarbon odor (10-90-0).	
40		50/6	0				No recovery.		
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 38' N of NW corner of city light building
Well Location E/W: 16.2' E of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | **B120**
 MW120

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	33	0.0	B120-45	ML		Wet, very dense, silt with fine SAND and gravel, gray, no hydrocarbon odor with wood ash (60-35-5).	
50		50/6	33	0.0	B120-50	ML		Wet, very dense, SILT with fine sand and gravel, gray, no hydrocarbon odor (60-35-5).	
55								Boring terminated at 50.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 50 feet bgs, screened from 40 to 50 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW120.	
60									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 015

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 40-50 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 128' S of NW corner of city light building
Well Location E/W: 18' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | B121

Site Address: 700 Dexter Avenue North
Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete cored prior to drilling. Concrete 4 inches thick.	
5	8 16 20		100	0.0	B121-05	SM		Damp, medium dense, silty SAND with gravel, brown, (30-60-10) (FILL).	
10	6 7 8		100	0.0		SM		Damp, loose, silty SAND with gravel and miscellaneous debris, black, no hydrocarbon odor (FILL).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 26.5 feet bgs
Total Well Depth: 25 feet bgs
State Well ID No.: BID 016

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 128' S of NW corner of city light building
Well Location E/W: 18' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | B121

Site Address: 700 Dexter Avenue North
Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	3 2 1		100	0.0	B121-15	ML		Wet, loose, SILT with sand and gravel, gray, wood ash, no hydrocarbon odor (50-40-10).	
20	0 2 4		100	0.0		ML		Wet, dense, SILT with sand and gravel, gray, no hydrocarbon odor (possible lake sediments) (50-40-10).	
25	1 1 3		100	0.0	B121-25	ML		Moist, loose, SILT with fine sand and organics, gray, no hydrocarbon odor (70-30-0).	
30								Boring terminated at 26.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 25 feet bgs, screened from 15 to 25 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW121.	

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 26.5 feet bgs
Total Well Depth: 25 feet bgs
State Well ID No.: BID 016

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 8 inches thick.	
5								Cleared with vent truck????	
10		8 8 8	100	2.5	B122-10	ML		Damp, loose, SILT with sand and gravel and brick debris, dark gray to black, moderate hydrocarbon odor (50-40-10) (FILL).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	5 6 8		100	4.0	B122-15	SM		Moist to wet, silty SAND with gravel, gray, slight hydrocarbon odor (40-50-10).	
20	3 5 9		100	0.0	B122-20	SM		Wet, loose, silty SAND with gravel, gray, no hydrocarbon odor (40-50-10).	
25	5 8 10		80	0.0	B122-25-20131217 B122-25	SP		Wet, loose, medium to fine SAND with silt and gravel, gray, slight hydrocarbon odor (10-85-5).	
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	17 50/6	100	0.0	B122-30	ML		Damp, very dense, SILT with fine sand, gray, no hydrocarbon odor (60-40-0).		
35	14 50/6	100	0.0	B122-35	ML		Moist to wet, very dense, SILT with fine sand, gray, no hydrocarbon odor (55-45-0).		
40	19 50/6	100	0.0	B122-40-20131217 B122-40	ML		Wet, very dense, SILT with fine sand, gray, no hydrocarbon odor (60-40-0).		
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6	100	0.0	B122-45	SP		Wet, very dense, medium to fine SAND with silt, gray, no hydrocarbon odor (10-90-0).		
50	50/6	100	0.0	B122-50	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (65-30-5).		
55	50/6	100	0.0		SM		Damp to moist, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (45-40-15). Sample is warm to the touch.		
60									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	50/6	100	0.0	B122-60	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-45-15).		
65	50/6	70	0.0		SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-45-15).		
70	50/6	90	0.0	B122-70	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-45-15).		
75									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75		50/6	80	0.0		SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-50-10).	
80		50/6	100	0.0	B122-80	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-50-10).	
85		50/6	100	0.0	B122-85-20131217	SP		Driller reports change in drilling conditions. Easier conditions. Wet, very dense, medium to fine SAND with silt and gravel, gray, no hydrocarbon odor (10-80-10).	
90									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90								Lost sampler.	
95								Had to overdrill sampler.	
100		50/6	100	0.0	B122-100	SP		Wet, very dense, coarse to medium SAND and silt with gravel, gray, no hydrocarbon odor (5-8-15). Heaving conditions. Sampler stuck in Auger, sand locked. Boring advanced to 115 and set well without collecting soil samples.	
105									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105								<p>Heaving conditions. Sampler stuck in Auger, sand locked. Boring advanced to 115 and set well without collecting soil samples.</p>	
110									
115								<p>Boring terminated at 115 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 115 feet bgs, screened from 105 to 115 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW122.</p>	
120									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 128' S of NW corner of city light building
Well Location E/W: 18' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | B121

Site Address: 700 Dexter Avenue North
Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete cored prior to drilling. Concrete 4 inches thick.	
5	8 16 20		100	0.0	B121-05	SM		Damp, medium dense, silty SAND with gravel, brown, (30-60-10) (FILL).	
10	6 7 8		100	0.0		SM		Damp, loose, silty SAND with gravel and miscellaneous debris, black, no hydrocarbon odor (FILL).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 26.5 feet bgs
Total Well Depth: 25 feet bgs
State Well ID No.: BID 016

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/16/13
Surface Conditions: Concrete
Well Location N/S: 128' S of NW corner of city light building
Well Location E/W: 18' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/16/13

BORING LOG | B121

Site Address: 700 Dexter Avenue North
Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	3 2 1		100	0.0	B121-15	ML		Wet, loose, SILT with sand and gravel, gray, wood ash, no hydrocarbon odor (50-40-10).	
20	0 2 4		100	0.0		ML		Wet, dense, SILT with sand and gravel, gray, no hydrocarbon odor (possible lake sediments) (50-40-10).	
25	1 1 3		100	0.0	B121-25	ML		Moist, loose, SILT with fine sand and organics, gray, no hydrocarbon odor (70-30-0).	
30								Boring terminated at 26.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 25 feet bgs, screened from 15 to 25 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW121.	

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 26.5 feet bgs
Total Well Depth: 25 feet bgs
State Well ID No.: BID 016

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 8 inches thick.	
5								Cleared with vent truck????	
10		8 8 8	100	2.5	B122-10	ML		Damp, loose, SILT with sand and gravel and brick debris, dark gray to black, moderate hydrocarbon odor (50-40-10) (FILL).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	5 6 8		100	4.0	B122-15	SM		Moist to wet, silty SAND with gravel, gray, slight hydrocarbon odor (40-50-10).	
20	3 5 9		100	0.0	B122-20	SM		Wet, loose, silty SAND with gravel, gray, no hydrocarbon odor (40-50-10).	
25	5 8 10		80	0.0	B122-25-20131217 B122-25	SP		Wet, loose, medium to fine SAND with silt and gravel, gray, slight hydrocarbon odor (10-85-5).	
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	17 50/6	100	0.0	B122-30	ML		Damp, very dense, SILT with fine sand, gray, no hydrocarbon odor (60-40-0).		
35	14 50/6	100	0.0	B122-35	ML		Moist to wet, very dense, SILT with fine sand, gray, no hydrocarbon odor (55-45-0).		
40	19 50/6	100	0.0	B122-40-20131217 B122-40	ML		Wet, very dense, SILT with fine sand, gray, no hydrocarbon odor (60-40-0).		
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	100	0.0	B122-45	SP		Wet, very dense, medium to fine SAND with silt, gray, no hydrocarbon odor (10-90-0).	
50		50/6	100	0.0	B122-50	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (65-30-5).	
55		50/6	100	0.0		SM		Damp to moist, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (45-40-15). Sample is warm to the touch.	
60									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	50/6	100	0.0	B122-60	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-45-15).		
65	50/6	70	0.0		SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-45-15).		
70	50/6	90	0.0	B122-70	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-45-15).		
75									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75		50/6	80	0.0		SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-50-10).	
80		50/6	100	0.0	B122-80	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-50-10).	
85		50/6	100	0.0	B122-85-20131217	SP		Driller reports change in drilling conditions. Easier conditions. Wet, very dense, medium to fine SAND with silt and gravel, gray, no hydrocarbon odor (10-80-10).	
90									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90								Lost sampler.	
95								Had to overdrill sampler.	
100		50/6	100	0.0	B122-100	SP		Wet, very dense, coarse to medium SAND and silt with gravel, gray, no hydrocarbon odor (5-8-15). Heaving conditions. Sampler stuck in Auger, sand locked. Boring advanced to 115 and set well without collecting soil samples.	
105									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/17/12
Surface Conditions: Concrete
Well Location N/S: 35.8' N of NE corner of city light building
Well Location E/W: 5' E of NE corner of city light building
Reviewed by: CCC
Date Completed: 12/17/13

BORING LOG | **B122**
 MW122

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105								<p>Heaving conditions. Sampler stuck in Auger, sand locked. Boring advanced to 115 and set well without collecting soil samples.</p>	
110									
115								<p>Boring terminated at 115 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 115 feet bgs, screened from 105 to 115 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW122.</p>	
120									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: LAR HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 115 feet bgs
Total Well Depth: 115 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 105-115 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/18/12
Surface Conditions: Concrete
Well Location N/S: 49.5' S of northern-most point of building
Well Location E/W: 14.2' E of E wall of building
Reviewed by: CCC
Date Completed: 12/18/13

BORING LOG | **B123**
 MW123

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 10 inches thick.	
								Boring vac cleared to 10' bgs	
10	2 2 3		100	0.5	B123-10	ML		Damp, loose, SILT with fine sand and gravel, gray, no hydrocarbon odor (60-35-5).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BID 018

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/18/12
Surface Conditions: Concrete
Well Location N/S: 49.5' S of northern-most point of building
Well Location E/W: 14.2' E of E wall of building
Reviewed by: CCC
Date Completed: 12/18/13

BORING LOG | **B123**
 MW123

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	4 4 6		100	0.0		ML		Damp, loose, SILT with fine sand and gravel, gray, no hydrocarbon odor (50-35-5).	
20	2 3 3		100	0.0	B123-20	SM		Wet, loose, silty SAND with gravel, gray, no hydrocarbon odor (40-55-5).	
25	6 7 7		100	0.0		ML		Wet, loose, SILT with fine sand and gravel, gray, no hydrocarbon odor (60-35-5).	
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BID 018

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/18/12
Surface Conditions: Concrete
Well Location N/S: 49.5' S of northern-most point of building
Well Location E/W: 14.2' E of E wall of building
Reviewed by: CCC
Date Completed: 12/18/13

BORING LOG | **B123**
 MW123

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	0					No recovery. Drilling on loose rock.	
35								No sample.	
40								Through rock. Hammer threads damaged, cannot collect soil samples for the rest of the borin.	
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BID 018

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/18/12
Surface Conditions: Concrete
Well Location N/S: 49.5' S of northern-most point of building
Well Location E/W: 14.2' E of E wall of building
Reviewed by: CCC
Date Completed: 12/18/13

BORING LOG | **B123**
 MW123

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45						SM		Cuttings indicate wet silty SAND, gray, no hydrocarbon odor.	
50						SM		Cuttings indicate wet silty SAND, gray, no hydrocarbon odor.	
55						SM		Cuttings indicate wet silty SAND, gray, no hydrocarbon odor.	
60									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BID 018

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:

 Page: | **4 of 6**



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/18/12
Surface Conditions: Concrete
Well Location N/S: 49.5' S of northern-most point of building
Well Location E/W: 14.2' E of E wall of building
Reviewed by: CCC
Date Completed: 12/18/13

BORING LOG | **B123**
 MW123

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60						SM		Driller reports SAND from 70 to 80 feet bgs.	
65					SM				
70					SM				
75									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BID 018

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/18/12
Surface Conditions: Concrete
Well Location N/S: 49.5' S of northern-most point of building
Well Location E/W: 14.2' E of E wall of building
Reviewed by: CCC
Date Completed: 12/18/13

BORING LOG | **B123**
 MW123

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75	X					SM	X	Driller reports SAND from 70 to 80 feet bgs.	X
80								Boring terminated at 80 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 80 feet bgs, screened from 70 to 80 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW123.	
85									
90									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 80 feet bgs
Total Well Depth: 80 feet bgs
State Well ID No.: BID 018

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 70 to 80 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 8 inches thick.	
10	10-11	10	90	0.0	B124-10	GP		Damp, loose, gravelly SAND with silt, brown, no hydrocarbon odor (10-30-60).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	5 4 3		100	0.0	B124-15	ML		Damp, loose, SILT with fine sand and gravel, dark brown, no hydrocarbon odor (55-40-5).	
20	4 6 8		100	0.0	B124-20	ML		Moist, loose, SILT with fine sand and gravel, dark brown, no hydrocarbon odor (55-40-5).	
25	6 10 15		100	0.0	B124-25	SM		Wet, loose, silty SAND with gravel, brown, no hydrocarbon odor (25-65-10).	
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | B124
MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	10-16-17	100	0.0	B124-30	SP		Damp, dense, medium to fine SAND with gravel and silt, reddish brown, no hydrocarbon odor (10-80-10).		
35	11-11-13	100	0.0	B124-35	SM ML SP	 	Moist, loose, silty SAND with gravel, brown no hydrocarbon odor (35-60-5). Damp, loose, SILT with fine sand, brown, no hydrocarbon odor (55-45-0). Damp, loose, medium to fine SAND with silt and gravel, brown, no hydrocarbon odor (10-80-10).		
40	20-23-26	100	0.0	B124-40	SM		Wet, dense, silty SAND with gravel, brown, no hydrocarbon odor (20-70-10).		
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/4	100	0.0	B124-45_20131219 B124-45	SP		Wet, very dense, SAND with silt and gravel, brown, no hydrocarbon odor (10-80-10).		
50	50/6	100	0.0	B124-50	GP		Wet, very dense, gravelly SAND with silt, gray, no hydrocarbon odor (10-40-50).		
55	50/6	35	0.0	B124-55	SM		Wet, very dense, silty SAND with gravel, cohesive gray, no hydrocarbon odor (45-40-15).		
60									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	50/6	100	0.0	B124-60_20131219 B124-60	SP		Wet, very dense, medium to fine SAND with silt and trace gravel, gray, no hydrocarbon odor (10-85-5).		
65	50/6	100	0.0	B124-65	SM		Moist to wet, very dense, silty SAND and gravel, gray, cohesive, no hydrocarbon odor (20-65-15).		
70	50/6	100	0.0	B124-70	SM		Wet, very dense, silty SAND with trace gravel, gray, no hydrocarbon odor (30-60-10).		
75									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75		50/6	100	0.0	B124-75	ML		Damp, very dense, SILT with fine sand, bray, cohesive, no hydrocarbon odor (75-25-0).	
80		50/6	66	0.0	B124-80	ML		Damp, very dense, SILT with fine sand, cohesive, gray, no hydrocarbon odor (50-50-0).	
85		50/6	66	0.0	B124-85	SM		Moist, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (30-55-15).	
90									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | B124 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90		50/6	60	0.0	B124-90	ML		Damp, very dense, SILT with fine sand, gray, cohesive, no hydrocarbon odor (80-20-0).	
95		50/6	100	0.0	B124-95	ML		Damp, very dense, SILT with fine sand and trace gravel, gray, cohesive, no hydrocarbon odor (50-45-5).	
100		50/6	100	0.0	B124-100	SP		Wet, very dense, medium to fine SAND with silt, gray, no hydrocarbon odor (10-90-0).	
105									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
105		50/6	100	0.0	B124-105	SP		Wet, very dense, medium to fine SAND with gravel, dark gray, no hydrocarbon odor (10-90-0).	
110		50/6	33	0.0	B124-110	SP		Wet, very dense, medium to fine SAND with silt, dark gray, no hydrocarbon odor (10-90-0).	
115		50/6	100	0.0	B124-115	SP		Wet, very dense, medium to fine SAND with silt, dark gray, no hydrocarbon odor (10-90-0).	
120									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/19/13
Surface Conditions: Concrete
Well Location N/S: 8.5' N of NW corner of building
Well Location E/W: 13' E of NW corner of building
Reviewed by: CCC
Date Completed: 12/19/13

BORING LOG | **B124**
 MW124

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
120	X	50/6	100	0.0	B124-120	SP		Wet, very dense, medium to fine SAND with silt, dark gray, no hydrocarbon odor (10-90-0).	
125								Boring terminated at 120.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 120 feet bgs, screened from 110 to 120 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW124.	
130									
135									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 120.5 feet bgs
Total Well Depth: 120 feet bgs
State Well ID No.:

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 110 to 120 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/20/13
Surface Conditions: Concrete
Well Location N/S:
Well Location E/W:
Reviewed by: CCC
Date Completed: 12/20/13

BORING LOG | B125
MW125

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 10 inches thick.	
5	8 9 10		100	0.2	B125-05	SM		Damp, loose, silty SAND with gravel, brown, no hydrocarbon odor (35-45-20).	
10	5 7 8		90	0.2	B125-10	SM		Damp, loose, silty SAND with gravel, brown, no hydrocarbon odor (30-50-20).	
15									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 31.5 feet bgs
Total Well Depth: 30 feet bgs
State Well ID No.: BID 020

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/20/13
Surface Conditions: Concrete
Well Location N/S:
Well Location E/W:
Reviewed by: CCC
Date Completed: 12/20/13

BORING LOG | **B125**
 MW125

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	6 7 7		100	0.0	B125-15	ML		Damp to moist, loose, SILT with fine sand, greenish gray, no hydrocarbon odor (80-20-0).	
20	2 4 6		100	0.2	B125-20	SM		Wet, loose, silty SAND with gravel, gray, no hydrocarbon odor (30-65-5).	
25	50/6		100	0.0	B125-25	ML		Damp, very dense. SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (50-40-10).	
30									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 31.5 feet bgs
Total Well Depth: 30 feet bgs
State Well ID No.: BID 020

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/20/13
Surface Conditions: Concrete
Well Location N/S:
Well Location E/W:
Reviewed by: CCC
Date Completed: 12/20/13

BORING LOG | **B125**
 MW125

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling 20 feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	8 9 9		100	0.0	B125-30	ML		Damp, loose, SILT with fine sand, brown, no hydrocarbon odor, plastic (80-20-0).	
35								Boring terminated at 31.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 30 feet bgs, screened from 15 to 30 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW125.	
40									
45									

Drilling Co./Driller: Cascade Drilling/ David
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 31.5 feet bgs
Total Well Depth: 30 feet bgs
State Well ID No.: BID 020

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Cement
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 10" thick	
5								Clear boring with vector truck to depth of approximately 10 feet bgs.	
10	10 16 17		100	400	B126-10	SM		Damp, dense, silty SAND with gravel, gray, moderate hydrocarbon odor (35, 50, 15).	
15					B126-15				

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15		4 4 4	100	5.7		SM-ML		Moist, loose, silty SAND with gravel, gray, slight hydrocarbon odor (45, 45, 10).	
20		8 4 4	15	3.2	B126-20	SM-ML		Wet, loose, silt with fine SAND, gray, no hydrocarbon odor (55, 45, 0).	
25		8 10 11	100	2.8	B126-25	SP-SM		Wet, loose, fine to medium SAND with silt, gray, no hydrocarbon odor (10, 90, 0).	
30									

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	12 16 17		100	0.5	B126-30	SP-SM		Moist, dense, very fine SAND with silt, gray, no hydrocarbon odor (10, 90, 0).	
35	50/6		100	0.0	B126-35	SP-SM		Wet, very dense, very fine SAND with silt, gray, no hydrocarbon odor (10, 90, 0).	
40	50/6		100	0.2	B126-40	SP-SM		Wet, very dense, fine to medium SAND with silt, gray, no hydrocarbon odor (10, 90, 0).	
45									

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	33	0.0	B126-45	ML		Damp, very dense, silt with fine SAND, gray, no hydrocarbon odor (60, 40, 0).	
50		50/6	100	0.0	B126-50	SM-ML		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40, 50, 0).	
55		50/6	33	0.0	B126-55	ML		Damp, very dense, SILT with fine sand and gravel, gray, cohesive, no hydrocarbon odor (50, 40, 10).	
60									

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60		50/6	33	0.0	B126-60	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (60, 30, 10).	
65		50/6	33	0.0	B126-65	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (60, 30, 10).	
70		50/6	100	0.0	B126-70	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (50, 40, 10).	
75									

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
75		50/6	33	0.0	B126-75	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (50, 40, 10).	
80		50/6	33	0.0	B126-80	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (50, 40, 10).	
85		50/6	33	0.0	B126-85	ML		Damp, very dense, SILT with fine sand and gravel, cohesive, gray, no hydrocarbon odor (50, 40, 10).	
90									

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: RAH
Date Started: 12/30/13
Surface Conditions: Concrete
Well Location N/S: 162 ft north of NE corner of Seattle City Light Bld
Well Location E/W: 4.5 ft east of NE corner of Seattle City Light Building
Reviewed by:
Date Completed: 12/30/13

BORING LOG | **B126**
 MW126

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
90	X	50/6	0					Slough in sampler.	
95	X	50/6	100	0.0	B126-95	SP		Wet, very dense, fine to coarse SAND with gravel and silt, gray, no hydrocarbon odor, outwash sands (5, 90, 5).	
100								EOB at 95.5 feet bgs. Set well MW126.	
105									

Drilling Co./Driller: Cascade/Frank
Drilling Equipment: HSA
Sampler Type: Dames and Moore
Hammer Type/Weight: 140 lbs
Total Boring Depth: 95.5 feet bgs
Total Well Depth: 95 feet bgs
State Well ID No.: BID 021

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 85 to 95 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush Mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/31/13
Surface Conditions: Concrete
Well Location N/S: 155' N of NW corner of city light building
Well Location E/W: 4' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/31/13

BORING LOG | **B127**
 MW127

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								Concrete 7 inches thick.	
								Vac clean to 10' bgs.	
10	9 18 16		80	0.0	B127-10	SM		Damp, dense, silty SAND with gravel, brown, no hydrocarbon odor (35-55-10).	
15									

Drilling Co./Driller: Cascade Drilling/ Frank
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 022

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/31/13
Surface Conditions: Concrete
Well Location N/S: 155' N of NW corner of city light building
Well Location E/W: 4' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/31/13

BORING LOG | **B127**
 MW127

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	4 7 8		90	0.0	B127-15	ML		Moist, loose, SILT with fine sand, gray, no hydrocarbon odor (75-25-0).	
20	16 50/6		0	--	--			Wood in sampler.	
25	50/6		100	0.0	B127-25	GM		Wet, very dense, silty GRAVEL with sand, gray, no hydrocarbon odor (20-20-60). Wood waste and some soil in samler.	
30									

Drilling Co./Driller: Cascade Drilling/ Frank
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 022

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/31/13
Surface Conditions: Concrete
Well Location N/S: 155' N of NW corner of city light building
Well Location E/W: 4' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/31/13

BORING LOG | **B127**
 MW127

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30		50/6	50	0.0	B127-30	SP		Wet, very dense, medium to fine SAND with silt, gray, no hydrocarbon odor (10-90-0).	
35		50/6	70	0.0	B127-35	ML		Damp, very dense, SILT with fine sand, cohesive, gray, no hydrocarbon odor (70-30-0).	
40		50/6	50	0.0	B127-40	ML		Wet, very dense, SILT with fine sand, cohesive, gray, no hydrocarbon odor (60-40-0).	
45								Trace sand with gravel in end of sampler.	

Drilling Co./Driller: Cascade Drilling/ Frank
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 022

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



Project: 700 Dexter
Project Number: 0797-001-02
Logged by: RAH
Date Started: 12/31/13
Surface Conditions: Concrete
Well Location N/S: 155' N of NW corner of city light building
Well Location E/W: 4' W of NW corner of city light building
Reviewed by: CCC
Date Completed: 12/31/13

BORING LOG | **B127**
 MW127

Site Address: 700 Dexter Avenue North
 Seattle, WA

Water Depth At Time of Drilling -- feet bgs
 Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45		50/6	100	0.0	B127-45	SM		Damp, very dense, silty SAND with gravel, cohesive, gray, no hydrocarbon odor (40-50-10).	
50		50/6	100	0.0	B127-50	SP		Wet, very dense, medium to fine SAND with silt, brown, no hydrocarbon odor (10-90-0).	
55									
60								Boring terminated at 50.5 feet below ground surface (bgs). Two-inch diameter well installed to a depth of 50 feet bgs, screened from 40 to 50 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW127.	

Drilling Co./Driller: Cascade Drilling/ Frank
Drilling Equipment: HSA
Sampler Type: D+M
Hammer Type/Weight: 140 lbs
Total Boring Depth: 50.5 feet bgs
Total Well Depth: 50 feet bgs
State Well ID No.: BID 022

Well/Auger Diameter: 2" / 8.25" inches
Well Screened Interval: 15 to 30 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush-mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: DMM
Date Started: 1/9/14
Surface Conditions: Concrete
Well Location N/S: 22 ft south of fire hydrant
Well Location E/W: 1 ft east of fire hydrant
Reviewed by: --
Date Completed: 1/9/14

BORING LOG | **B128**
 MW128

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0									
5									
10		2 3 4	100	52.8	B128-10	SM		Damp, loose, silty fine SAND with trace gravel, gray, faint hydrocarbon odor (40, 55, 5).	
15									

Boring air-knifed to 10 feet bgs prior to drilling.

Damp, loose, silty fine SAND with trace gravel, gray, faint hydrocarbon odor (40, 55, 5).

Drilling Co./Driller: Cascade/Dave
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.:

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 60 to 70 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: DMM
Date Started: 1/9/14
Surface Conditions: Concrete
Well Location N/S: 22 ft south of fire hydrant
Well Location E/W: 1 ft east of fire hydrant
Reviewed by: --
Date Completed: 1/9/14

BORING LOG | **B128**
 MW128

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	5 5 3		50	2.6	B128-15	SM		Wet, loose, wood debris with some soil - silty SAND with gravel, brown, no hydrocarbon odor (20, 70, 10).	
20	4 7 8		33	1.3	B128-20	SM-GM		Wet, medium dense, silty gravelly SAND, dark gray, no hydrocarbon odor (20, 40, 40).	
25	5 9 11		100	0.6	B128-25	SM-ML		Damp, medium dense, fine sandy SILT with trace gravel and wood debris, gray, no hydrocarbon odor (50, 45, 5).	
30									

Drilling Co./Driller: Cascade/Dave
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.:

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 60 to 70 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: DMM
Date Started: 1/9/14
Surface Conditions: Concrete
Well Location N/S: 22 ft south of fire hydrant
Well Location E/W: 1 ft east of fire hydrant
Reviewed by: --
Date Completed: 1/9/14

BORING LOG | **B128**
 MW128

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	6 10 15	100	0.0	B128-30	SM/SP		Wet, medium dense, fine SAND with silt, dark gray, no hydrocarbon odor (10, 90, 0).		
35	10 10 14	100	0.0	B128-35	ML		Damp, medium dense, sandy SILT with trace gravel and wood debris, gray, no hydrocarbon odor (70, 25, 5).		
40	12 14 15	100	0.0	B128-40	ML		Damp, dense, SILT with fine sand, gray, no hydrocarbon odor (80, 20, 0).		
45									

Drilling Co./Driller: Cascade/Dave
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.:

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 60 to 70 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: DMM
Date Started: 1/9/14
Surface Conditions: Concrete
Well Location N/S: 22 ft south of fire hydrant
Well Location E/W: 1 ft east of fire hydrant
Reviewed by: --
Date Completed: 1/9/14

BORING LOG | **B128**
 MW128

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	11 18 19		50	0.6	B128-45	ML		Damp, dense, SILT/CLAY with fine sand, with small sand stringer, gray, no hydrocarbon odor (85, 15, 0).	
50	12 13 15		100	0.6	B128-50	SM-ML		Damp to moist, medium dense, silty fine SAND to sandy SILT, gray, no hydrocarbon odor (50, 50, 0).	
55	12 12 16		75	0.0	B128-55	ML		Damp, dense, fine sandy SILT, gray, no hydrocarbon odor (60, 40, 0).	
60									

Drilling Co./Driller: Cascade/Dave
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.:

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 60 to 70 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

Notes/Comments:



DRAFT

Project: 700 Dexter
Project Number: 0797-001
Logged by: DMM
Date Started: 1/9/14
Surface Conditions: Concrete
Well Location N/S: 22 ft south of fire hydrant
Well Location E/W: 1 ft east of fire hydrant
Reviewed by: --
Date Completed: 1/9/14

BORING LOG | **B128**
 MW128

Site Address: 700 Dexter
 Seattle, Washington

Water Depth At Time of Drilling 15 feet bgs
Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
60	16 16 19	100	0.6	B128-60	SM/SP		Moist, dense, fine SAND with silt, gray, no hydrocarbon odor (10, 90, 0).		
65	11 12 14	100	0.0	B128-65	SM/SP		Moist, dense, fine SAND with silt, gray, no hydrocarbon odor (10, 90, 0).		
70	50/6	250	0.0	B128-70	SM/SP		Wet, very dense, fine SAND with silt, gray, no hydrocarbon odor (10, 90, 0).		
75							End of boring at 70.5. Install MW128.		

Drilling Co./Driller: Cascade/Dave
Drilling Equipment: HSA
Sampler Type: Split-spoon
Hammer Type/Weight: 300 lbs
Total Boring Depth: 70.5 feet bgs
Total Well Depth: 70 feet bgs
State Well ID No.:

Well/Auger Diameter: 2/8.25 inches
Well Screened Interval: 60 to 70 feet bgs
Screen Slot Size: 0.010 inches
Filter Pack Used: 2/12 Silica Sand
Surface Seal: Concrete
Annular Seal: Bentonite
Monument Type: Flush mount

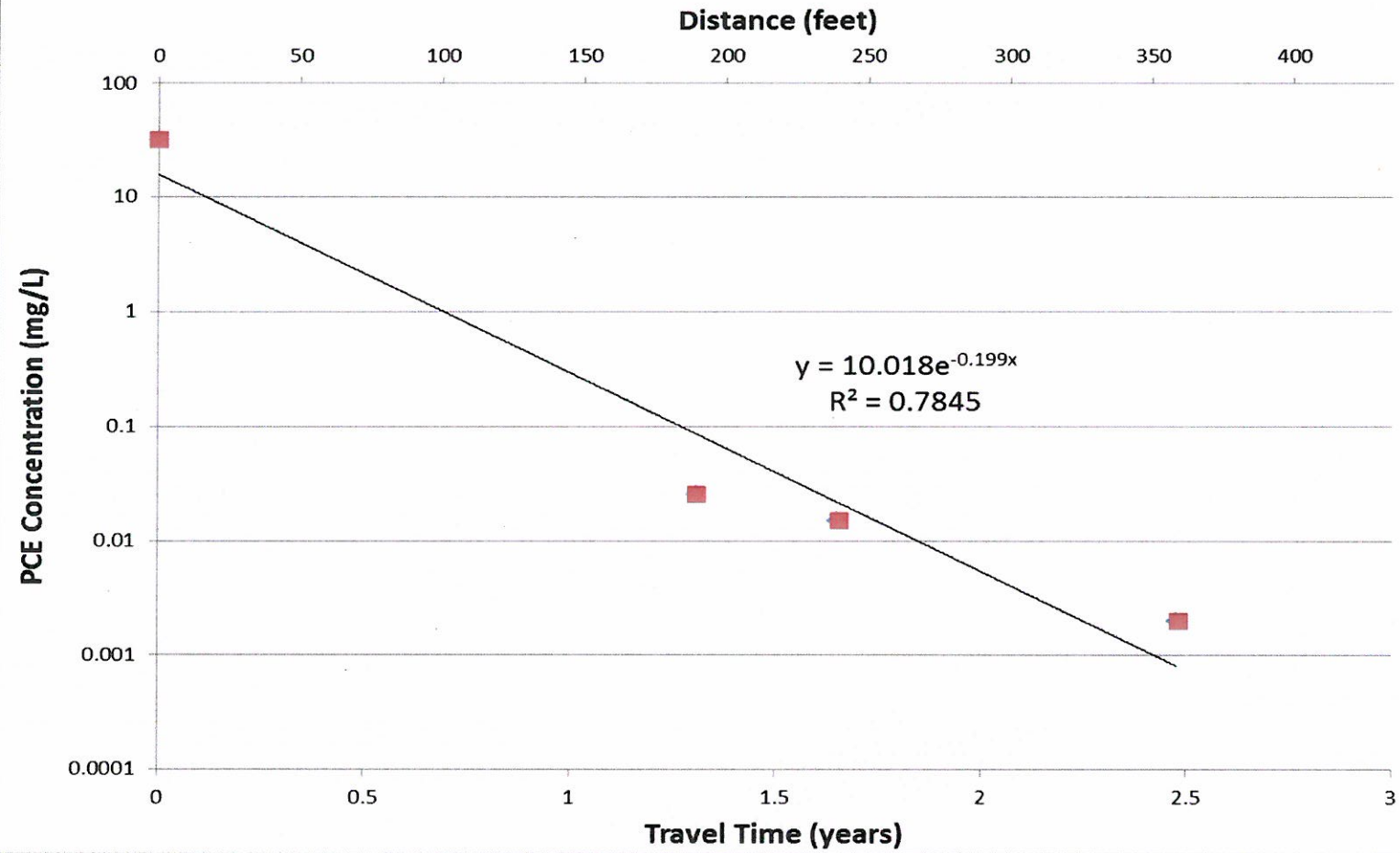
Notes/Comments:

APPENDIX C
LABORATORY REPORTS

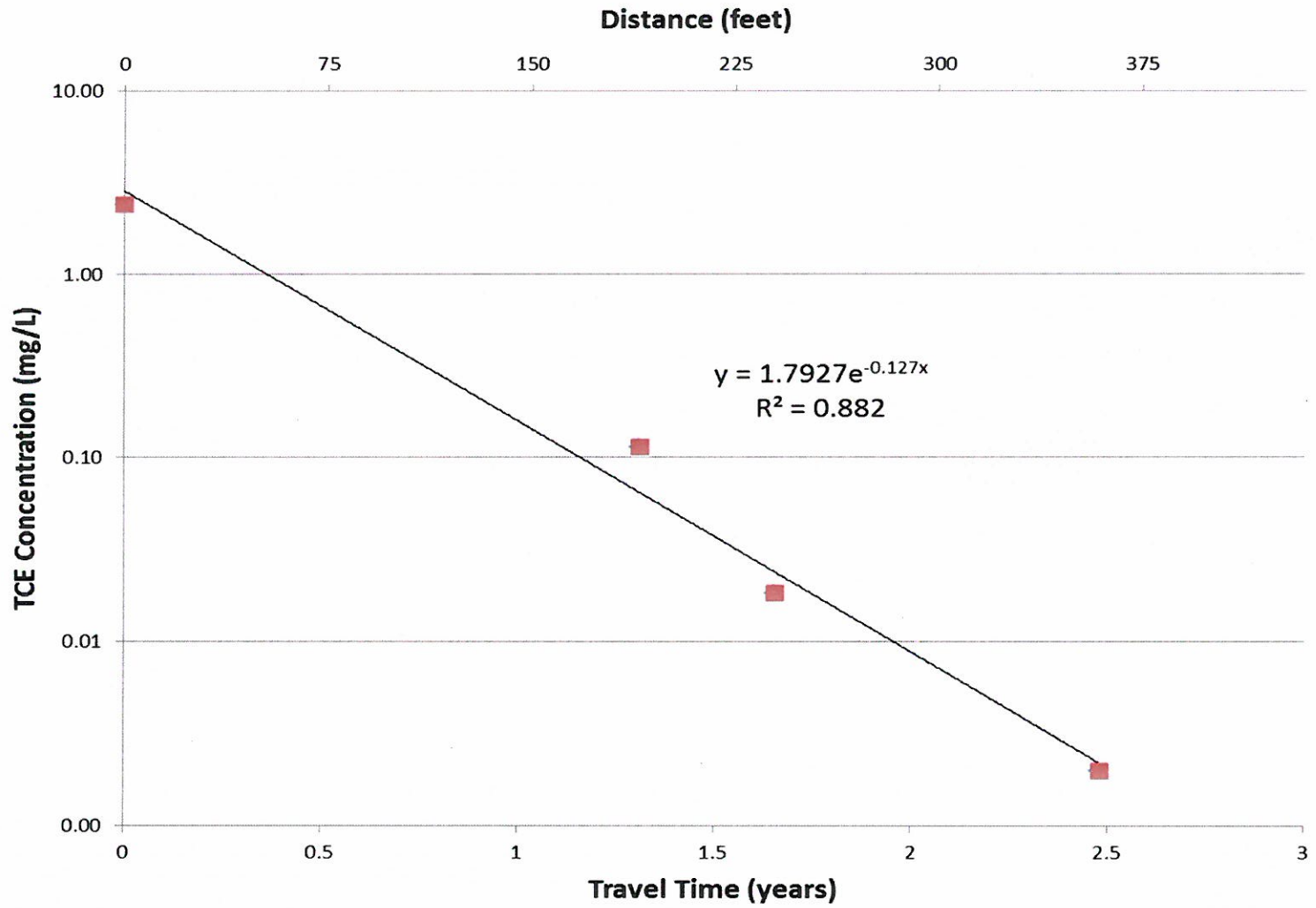
THIS APPENDIX IS AVAILABLE ON CD ONLY

APPENDIX D
DECAY RATES AND GEOCHEMICAL PARAMETERS

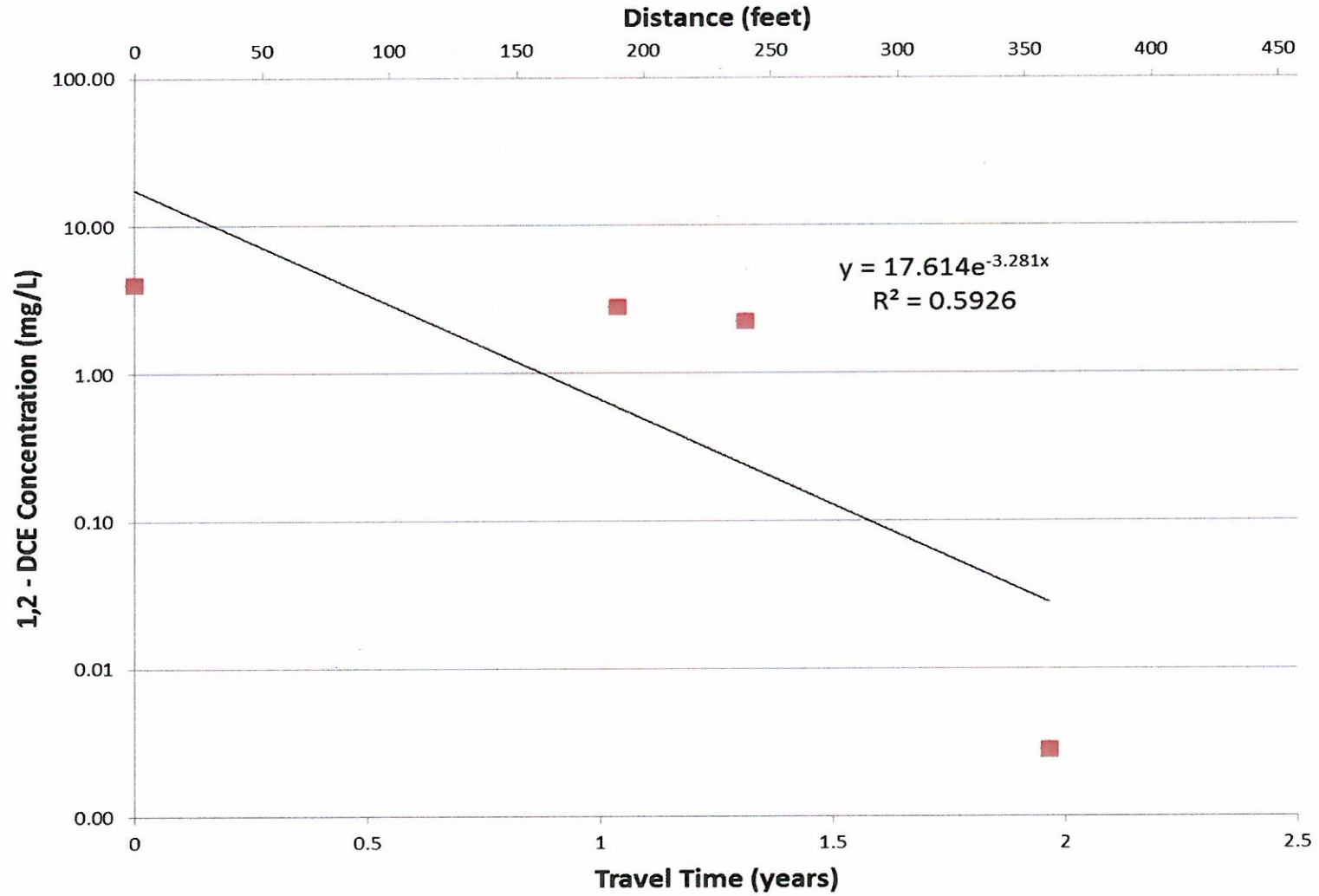
PCE - Flow Line 1 - MW107, MW109, MW108 and MW116



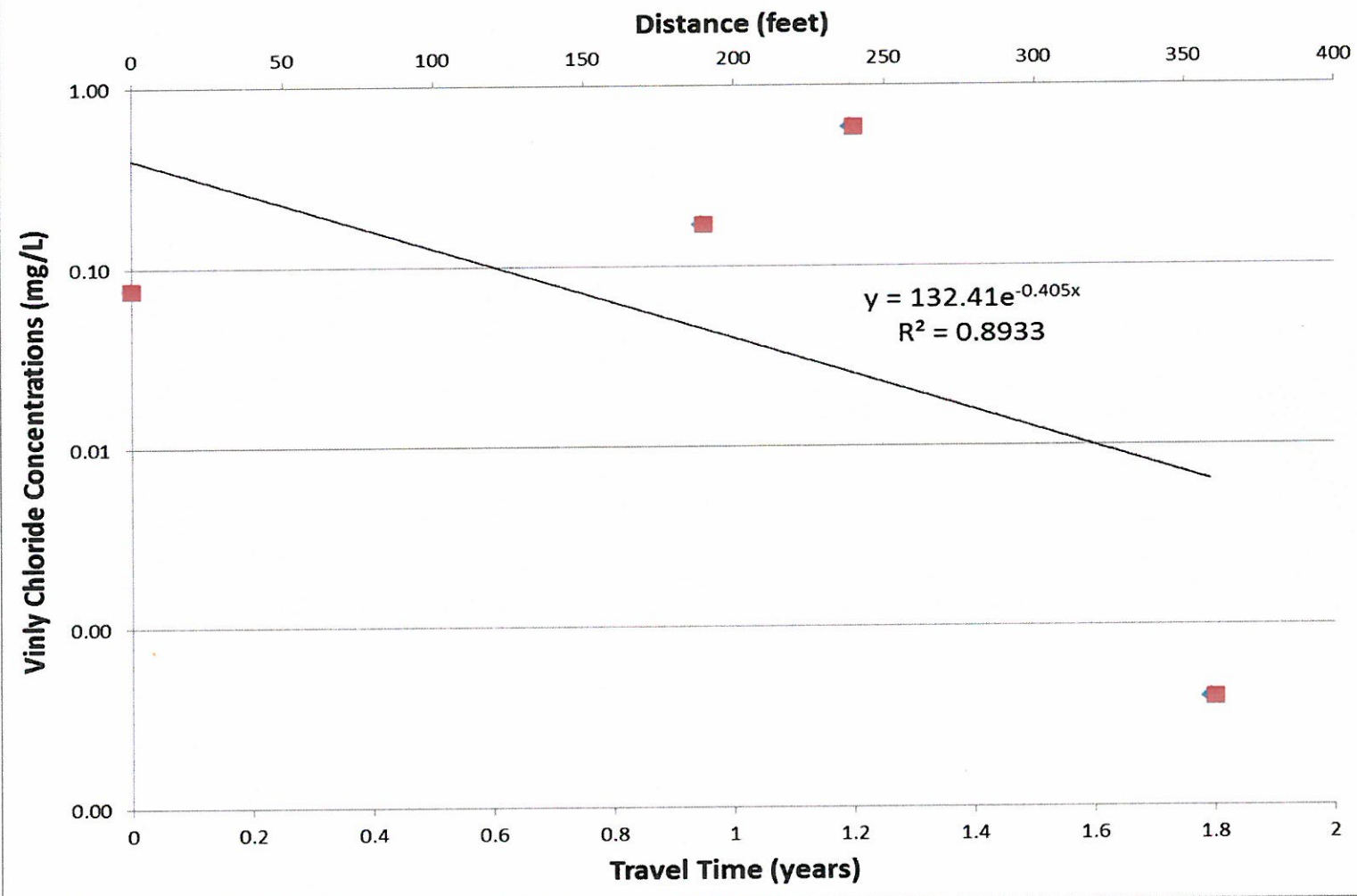
TCE - Flow Line 1 - MW107, MW109, MW108 and MW116



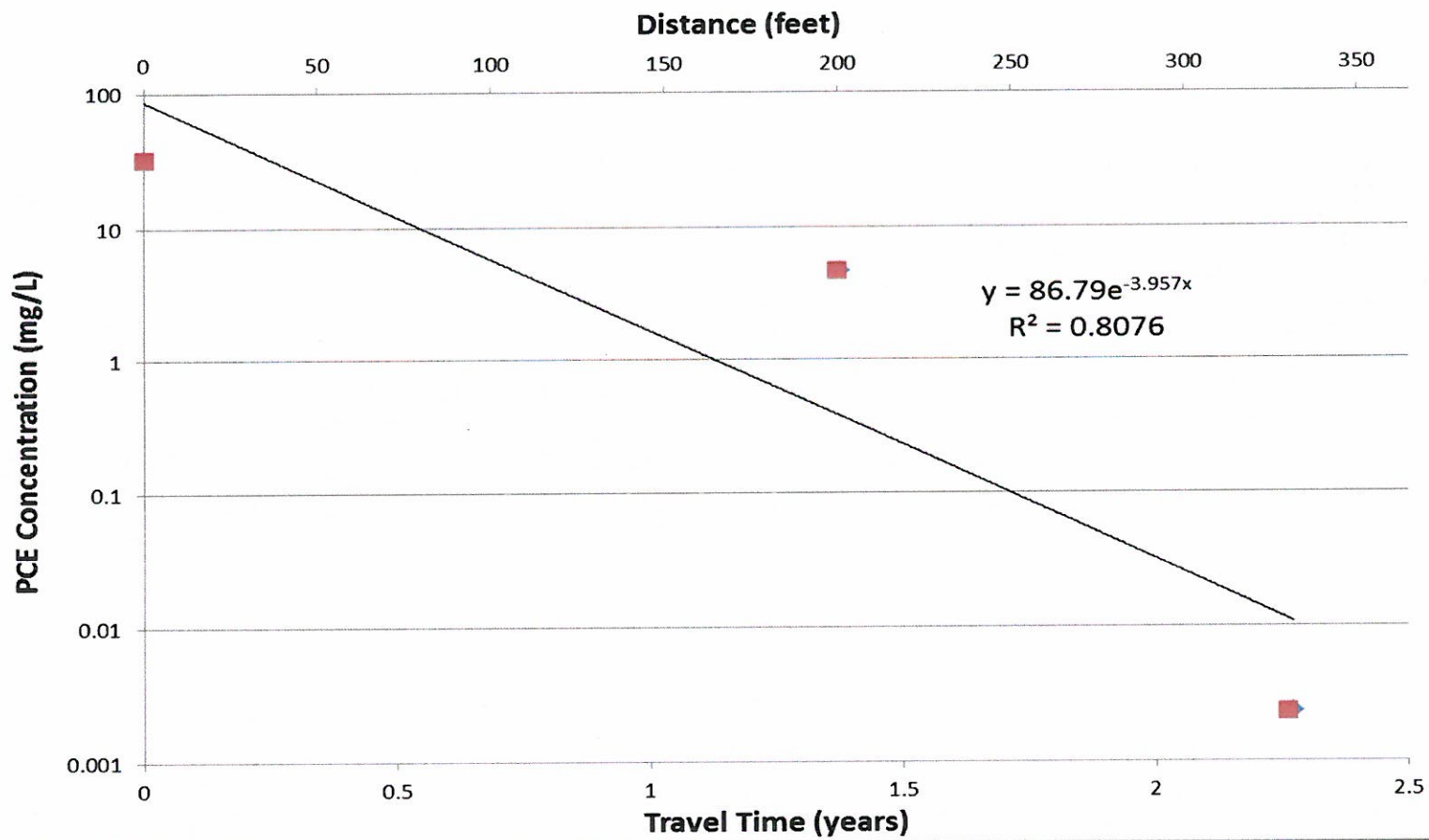
1,2- DCE Flow Line 1 - MW107, MW109, MW108, and MW116



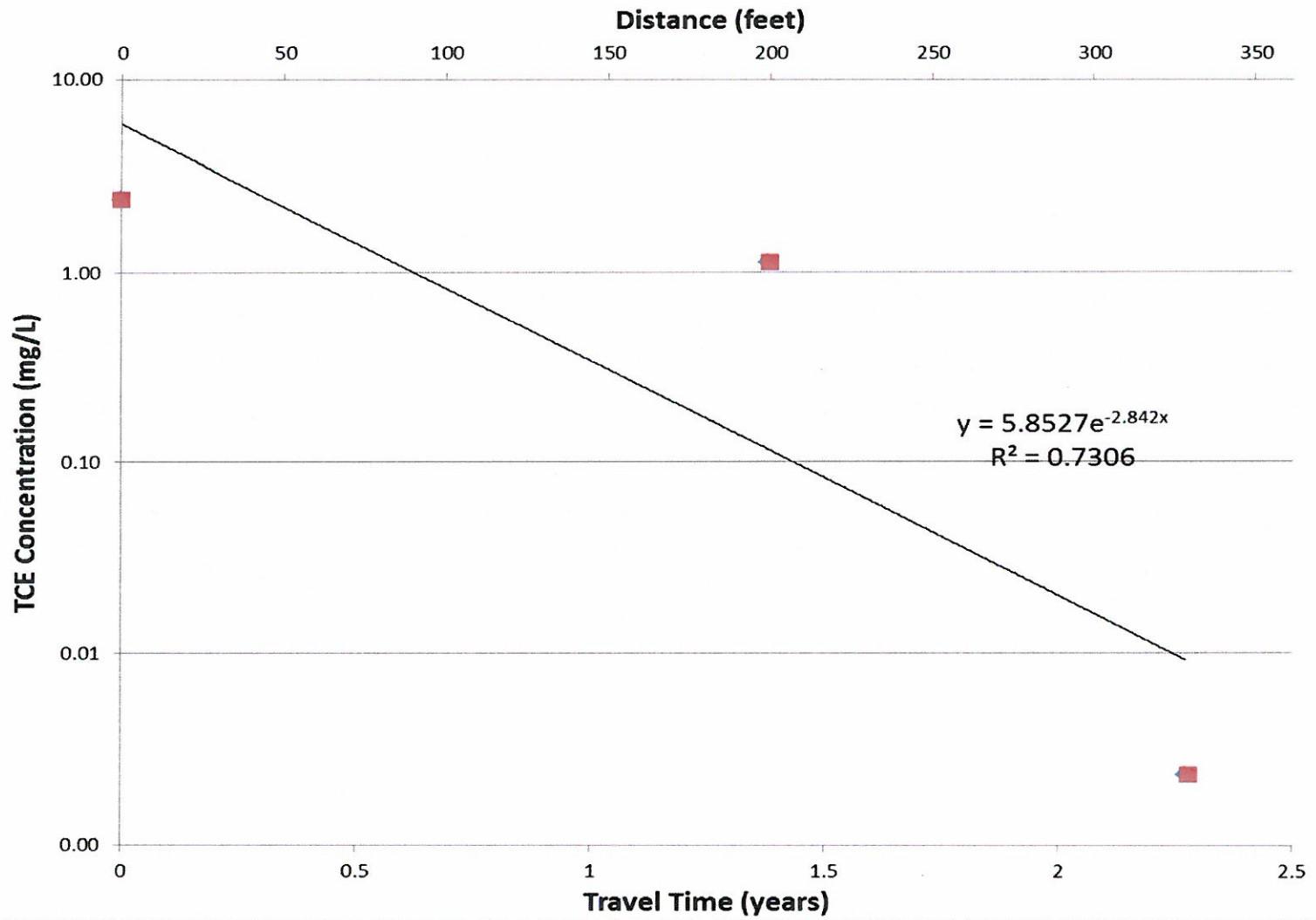
Vinyl Chloride Flow Line 1 - MW107, MW109, MW108, and MW116



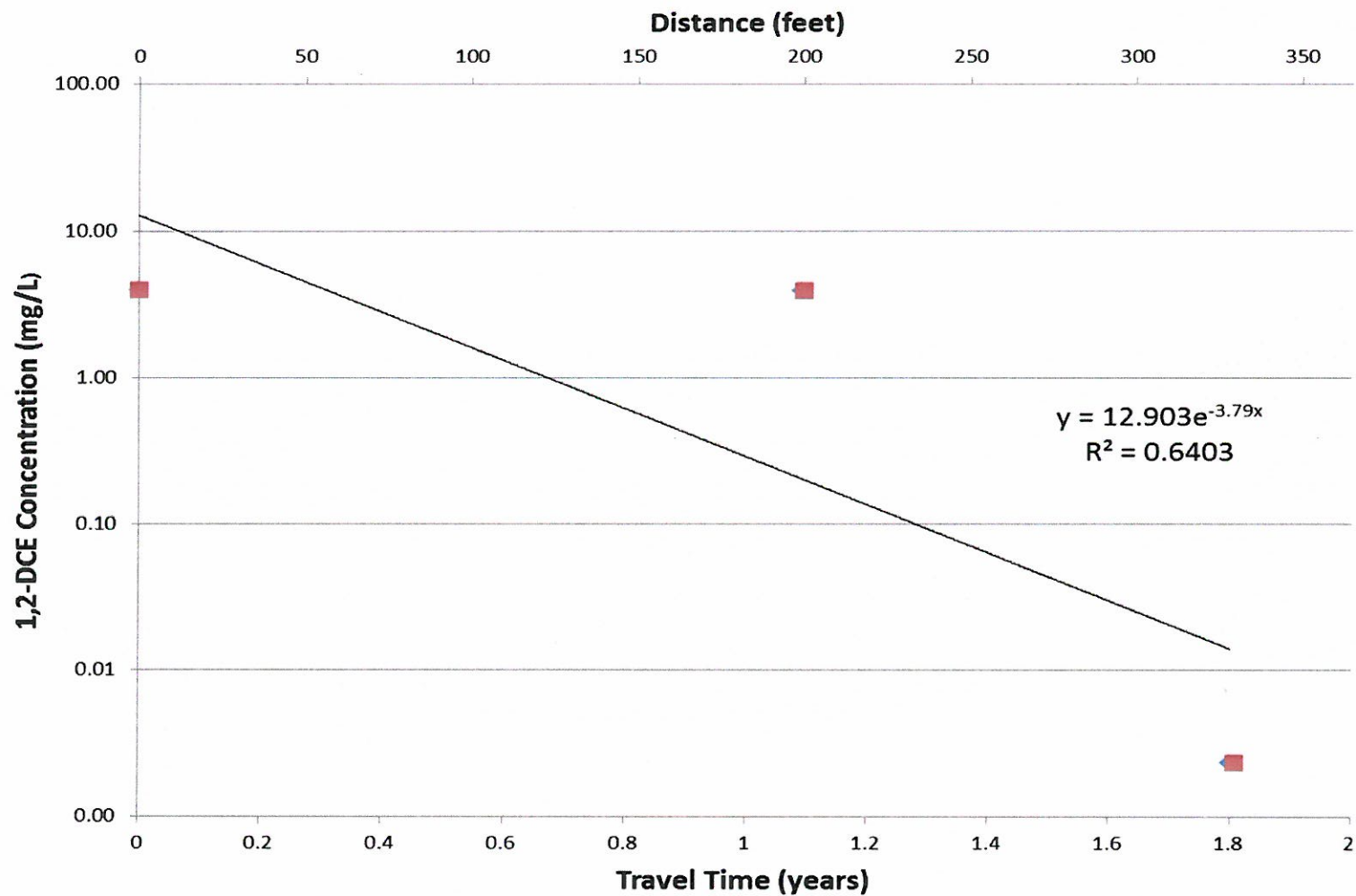
PCE Flow Line 2 - MW107, MW110, and MW115



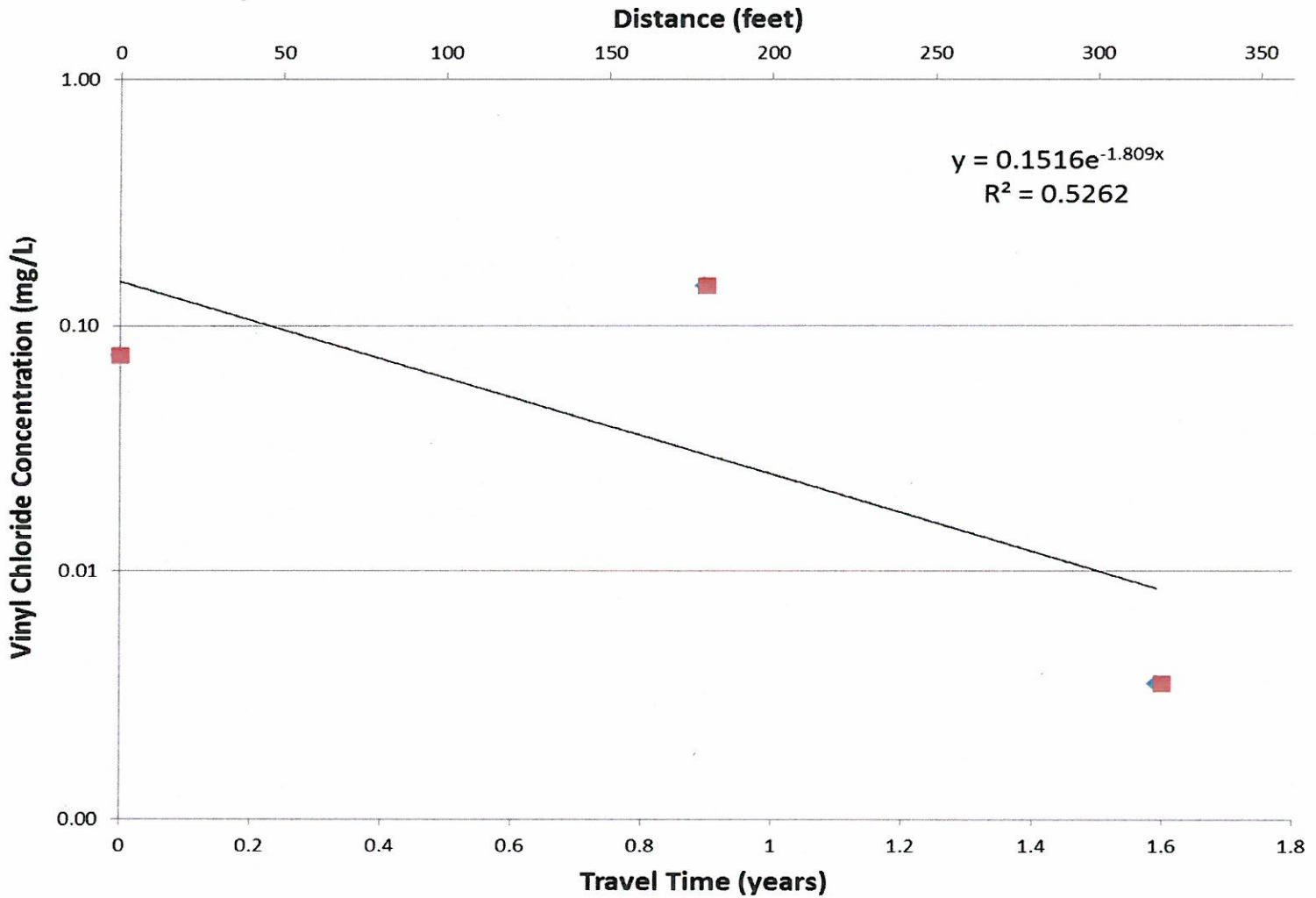
TCE Flow Line 2 - MW107, MW110, and MW115



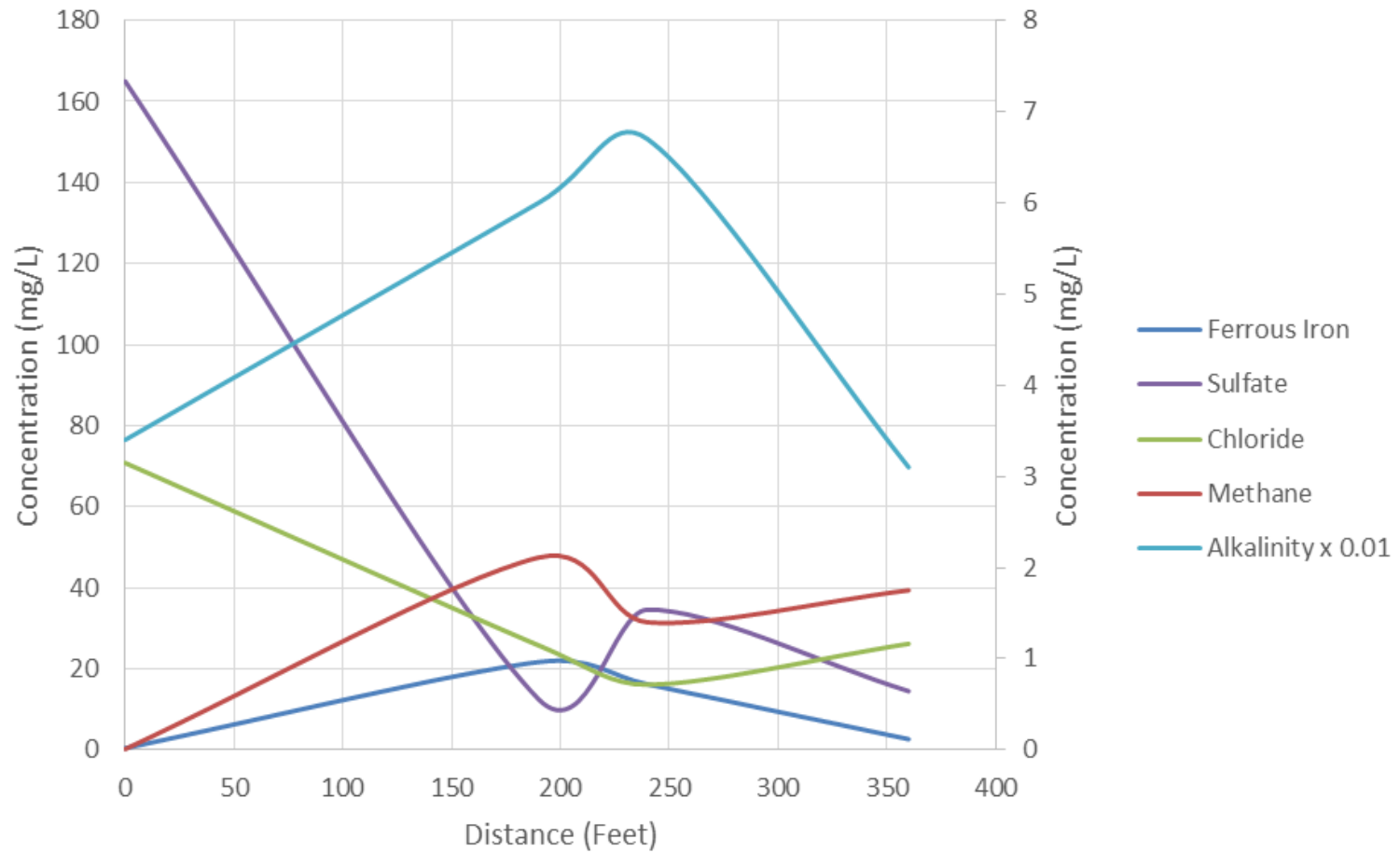
1,2-DCE Flow Line 2 - MW107, MW110, and MW115



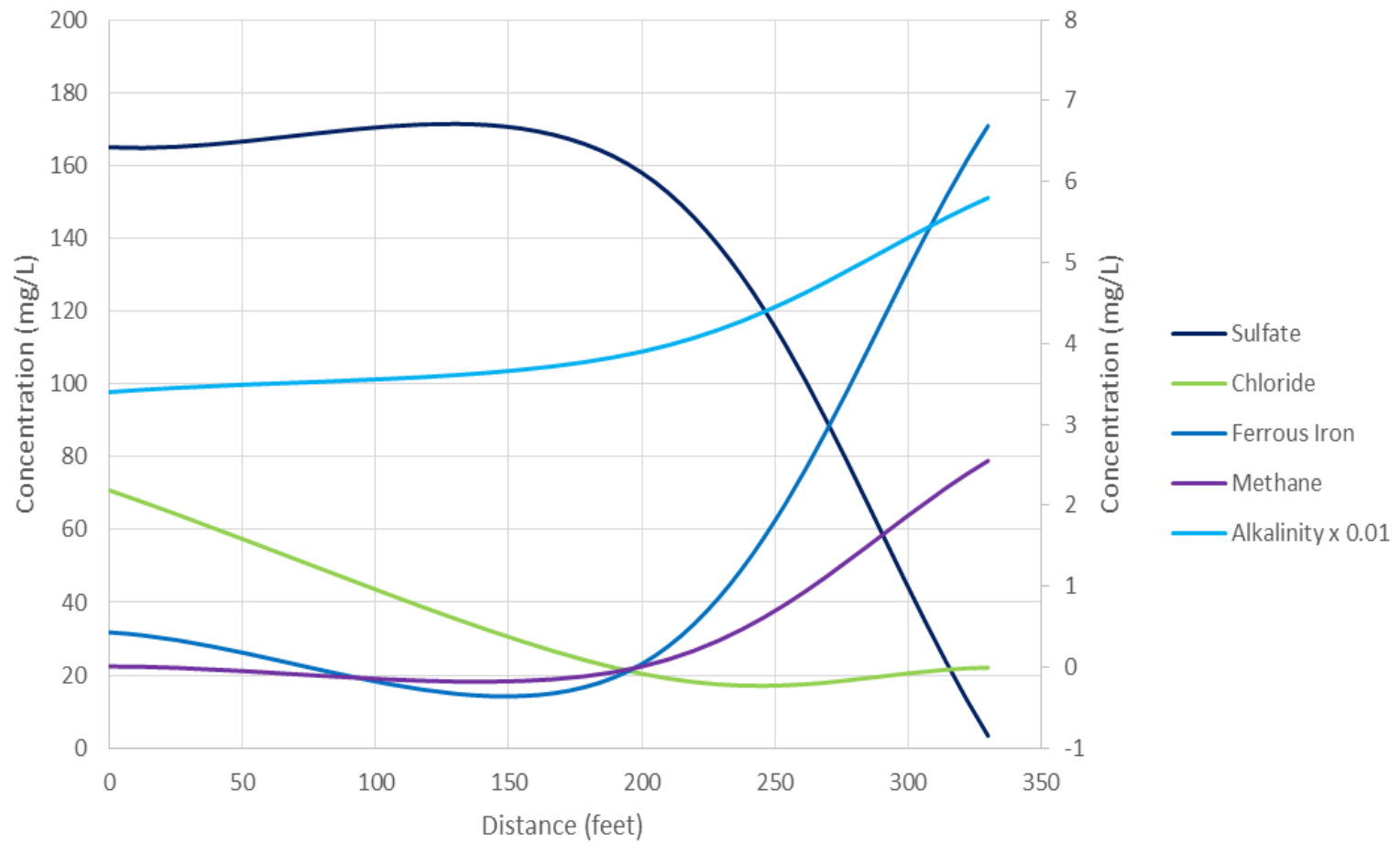
Vinyl Chloride Flow Line 2 - MW107, MW110, and MW115



Flow Line 1 MNA Parameters: MW107, MW109, MW108, and MW116



Flow Line 2 MNA Parameters:
MW107, MW110, and MW115



APPENDIX E
SAMPLING AND ANALYSIS PLAN

SAMPLING AND ANALYSIS PLAN

Appendix E of the Cleanup Action Plan



Property:

700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Prepared for:

Frontier Environmental Management, LLC
1821 Blake Street, Suite 3C
Denver, Colorado

Report Date:

September 28, 2015

DRAFT – ISSUED FOR REGULATORY REVIEW

Sampling and Analysis Plan

700 Dexter Property

700 Dexter Avenue North
Seattle, Washington 98109

Prepared for:

Frontier Environmental Management, LLC
1821 Blake Street, Suite 3C
Denver, Colorado 80202

Project No.: 0797-001

Prepared by:

DRAFT

Courtney Porter
Staff Hydrologist

Reviewed by:

DRAFT

John R. Funderburk, MSPH
Principal

September 28, 2015



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 - Hazardous Waste Label*
 - Non-Hazardous Waste Label*
 - Material Import and Export Summary Form*

ACRONYMS AND ABBREVIATIONS

%R	percent recovery
µg/L	micrograms per liter
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAP	Cleanup Action Plan
COC	chemical of concern
CVOC	chlorinated volatile organic compound
<i>DHC</i>	<i>Dehalococcoides</i> genus bacteria
DRPH	diesel-range petroleum hydrocarbons
DQO	data quality objective
Ecology	Washington State Department of Ecology
EOS	edible oil substrate
EPA	U.S. Environmental Protection Agency
ERH	electrical resistance heating
FC	Field Coordinator
FEM	Frontier Environmental Management, LLC
gpm	gallons per minute
GRPH	gasoline-range petroleum hydrocarbons
HASP	Health and Safety Plan
HSA	hollow-stem auger
ID	identifier
kg	kilograms
mg/kg	milligrams per kilogram

ACRONYMS AND ABBREVIATIONS (CONTINUED)

MS	matrix spike
MSD	matrix spike duplicate
MTCA	Washington State Model Toxics Control Act
NAVD88	North American Vertical Datum of 1988
NWTPH	Northwest Total Petroleum Hydrocarbon
ORP	oxidation-reduction potential
ORPH	oil-range petroleum hydrocarbons
PCE	tetrachloroethylene
PCS	petroleum-contaminated soil
PCU	Power Control Unit
PQL	practical quantitation limit
the Property	700 Dexter Avenue North, Seattle Washington
QC	quality control
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
RPD	relative percent difference
SAP	Sampling and Analysis Plan
the Site	soil, soil vapor, and/or groundwater contaminated with gasoline-, diesel-, and oil-range petroleum hydrocarbons; tetrachloroethylene; trichloroethylene; vinyl chloride, and/or cis-1,2-dichloroethylene beneath the Property and portions of the south- and east-adjointing properties, as well as beneath the 8 th , 9 th and Westlake Avenues North and Valley, Roy, and Broad Streets rights-of-way
SoundEarth	SoundEarth Strategies, Inc.
SVE	soil vapor extraction
TCE	trichloroethylene

ACRONYMS AND ABBREVIATIONS (CONTINUED)

TMP	temperature point
TSDf	treatment, storage, and disposal facility
USCS	Unified Soil Classification System
UST	underground storage tank
VOA	volatile organic analysis
VOC	volatile organic compound
WAC	Washington Administrative Code

1.0 INTRODUCTION

SoundEarth Strategies, Inc. (SoundEarth) has prepared this Sampling and Analysis Plan (SAP) for the 700 Dexter Property located at 700 Dexter Avenue North in Seattle, Washington (the Property; Figure E-1). In accordance with the Washington State Model Toxics Control Act (MTCA) Cleanup Regulations as established in Section 200 of Chapter 173-340 of the Washington Administrative Code (WAC 173-340-200), the Site is defined by the full lateral and vertical extent of contamination that has resulted from the former operation of a commercial laundry, dry cleaning facility, and gasoline service stations on the Property. Based on the information gathered to date, the Site includes soil, soil vapor, and groundwater contaminated with one or more of the following: gasoline-, diesel-, and oil-range petroleum hydrocarbons (GRPH, DRPH, and ORPH, respectively); tetrachloroethylene (PCE); trichloroethylene (TCE); vinyl chloride, and cis-1,2-dichloroethylene (cis-1,2-DCE) beneath the Property and portions of the south- and east-adjointing properties, as well as beneath the 8th, 9th and Westlake Avenues North and Valley, Roy, and Broad Streets rights-of-way (ROWs). The impacts beneath the Site likely are associated with the following: (1) a release of chlorinated solvents from the industrial laundry and dry cleaning facility that operated on the Property between 1925 and 1995 and (2) the operation of at least two refueling facilities on the northern portion of the Property and on the east-adjointing properties. The highest concentrations of chlorinated solvents are located in the west-central portion of the Property.

This SAP was developed to meet the requirements of a SAP as defined by MTCA (WAC 173-340-820).

1.1 PURPOSE AND OBJECTIVES

The purpose of the SAP is to describe the sample collection, handling, and analysis procedures to be implemented during the cleanup action in accordance with WAC 173-340-380 of MTCA. This SAP identifies specific sampling and analysis protocols, project schedule, and organization and responsibilities. It also provides detailed information regarding the sampling and data quality objectives, sample location and frequency, equipment, and procedures to be used during the cleanup action; sample handling and analysis; procedures for management of waste; quality assurance protocols for field activities and laboratory analysis; and reporting requirements.

1.2 SAMPLING AND ANALYSIS PLAN ORGANIZATION

The SAP is organized into the following sections:

- **Section 1.0, Introduction.** This section describes the purpose of the SAP and provides a description of the Property features and location, a brief summary of the current and historical uses of the Property, a summary of the results of previous investigations conducted at the Site, a description of the selected Cleanup Action Alternative, and a description of the tasks involved in the Cleanup Action Plan (CAP).
- **Section 2.0, Project Organization and Management.** This section presents the project team, including field personnel and management.
- **Section 3.0, Cleanup Action Plan Field Program.** This section presents the cleanup action objectives and construction activity summary.

- **Section 4.0, Performance and Confirmational Monitoring.** This section provides details regarding the performance and confirmational monitoring that has and will be conducted as part of the cleanup action.
- **Section 5.0, Sample Handling and Quality Control Procedures.** This section describes the sample handling techniques and quality assurance procedures that will be followed during the cleanup action.
- **Section 6.0, Analytical Testing.** This section describes the type and number of sample analyses that will be conducted on soil, groundwater, and process water samples during the cleanup action.
- **Section 7.0, Management of Investigation-Derived Waste.** This section provides details on handling and disposal procedures that will be implemented during the cleanup action.
- **Section 8.0, Data Quality Objectives.** This section summarizes the data quality objectives that will need to be met to ensure the validity of the analytical results.
- **Section 9.0, Data Collection.** This section describes the type, transfer, inventory management, and validation procedures of the data that will be gathered during the cleanup action.
- **Section 10.0, Quality Control Procedures.** This section provides details regarding the quality control (QC) procedures for both field activities and laboratory analysis.
- **Section 11.0, Corrective Actions.** This section identifies the approaches that will be used to correct any protocols that may compromise the quality of the data.
- **Section 12.0, Documentation and Records.** This section outlines the documentation that will be prepared during the cleanup action. It includes a discussion of document management, waste disposal tracking, and compliance reports.
- **Section 13.0, Health and Safety Procedures.** This section summarizes the health and safety procedures outlined in the Project-Specific Health and Safety Plan (Appendix F of the CAP).

1.3 BACKGROUND

This section provides a description of the Property features and location, a summary of historical Property use, and a summary of previous investigations conducted at the Property and adjoining parcels and ROWs.

1.3.1 Property Location and Description

The Property is comprised of a single tax parcel (King County parcel number 224900-0285) that covers approximately 61,440 square feet (1.4 acres) of land in the South Lake Union neighborhood of Seattle, Washington. The Property is listed at 700 Dexter Avenue North. American Linen Supply Company currently owns the Property.

The on-Property buildings were demolished in February and March 2013. The Property was formerly improved with a building with four additions, including the following: the original 1925-vintage, single-story building with basement and mezzanine (Building A) in the southeastern portion of the Property; a 1947-vintage, single-story masonry garage (Building B) in the northeast portion of the Property; a 1947-vintage, one-story addition with basement and

mezzanine in the southwestern portion of the Property; and a 1966-vintage, one-story concrete building with basement and mezzanine in the northwestern portion of the Property (Building C).

Building A was reportedly heated by a natural-gas-fueled hot water furnace. Potable water and sewer service are not currently provided to the Property. However, according to the earliest side sewer cards of the Property maintained by the Seattle Engineering Department, the sanitary sewer was connected to the Property in 1925. Seattle City Light provides electricity to the Property. No waste disposal services are currently provided to the Property.

1.3.2 Property History

Residences exclusively occupied the Property from at least 1893 until 1925, when Building A was constructed on the southern half of the Property. In 1930, a refueling facility was constructed on the northwest corner of the Property and was reportedly equipped with several underground storage tanks (USTs) and two dispenser islands. Building additions were constructed to the north between 1947 and 1966. Building B was constructed in the northeast portion of the Property as an addition to Building A in 1947 and operated initially as a parking garage and automotive repair facility. Four 6,000-gallon USTs containing heating oil in association with the boiler system were installed beneath Building A in 1947. Building C was constructed on the northwest portion of the Property in 1966. The 1930-vintage gasoline service station was demolished the same year. Building C housed laundry operations, a garage, and offices. A fuel dispenser with as many as three USTs was constructed on the northeast portion of the Property between 1947 and 1966. Building plans indicate that dry cleaning was conducted on the Property as early as 1966. According to reports by others, dry cleaning machines operated on the western portion of Building A in the 1978 and reportedly leaked solvents into the subsurface. The dry cleaning machines were no longer present on the Property by 1990. In 1986, Building B was redeveloped as a wastewater treatment facility for the commercial laundry operations, and several aboveground storage tanks containing acids, caustics, polymers, sludge, and water were installed. Waste material derived from the wastewater treatment facility was either directly discharged through the sewer system or conveyed into a disposal container to the north of Building B. In the mid-1990s, commercial laundry operations ceased, the wastewater treatment system was removed, and the buildings were leased to various tenants, including several automotive repair shops, a bakery, and a car rental office.

1.3.3 Findings of Previous Investigations

The results of previous subsurface investigations and the remedial investigation conducted at the Site suggest that the chlorinated solvent impacts confirmed in soil and groundwater beneath the Site are the result of a release from the laundry and dry cleaning facility that operated on the Property from 1925 through 1995. Historical building plans indicated that the bulk of the dry cleaning operations were conducted in Building A, with piping leading from the dry cleaning machines to the sumps in the boiler room on the western portion of Building A. Consistent with this information, the highest concentrations of chlorinated solvents are located near Building A in the west-central portion of the Property.

The high concentrations of PCE in soil and groundwater are inferred to be evidence of a release from the former dry cleaning facility that operated on the Property. Concentrations of PCE and associated chemicals of concern (COCs) in the soil decrease rapidly upgradient of the source area and are carried through advective transport downgradient of the source area. Vertical

distribution of solvent-contaminated soil is limited in large part by the presence of a layer of hard silt that underlies the Property at elevations between -5 and 5 feet above sea level (i.e., 35 to 45 feet below ground surface [bgs]). Approximately 70 percent of the solvent mass is held up by the silt layer; the remaining soil contamination extends up to 80 feet bgs.

As with solvent-contaminated soil, the bulk of the solvent contamination in groundwater remains above the hard silt layer underlying the Property. The highest concentrations of chlorinated solvents have been detected within the shallow and intermediate water-bearing zones, with relatively low levels detected in the deep water-bearing zone.

The lateral distribution of chlorinated solvent contamination is consistent with groundwater flow direction and is bound to the north by monitoring wells MW102, MW123, MW124, and MW126; to the west by monitoring wells MW112 and MW117, and to the south by monitoring well MW118. The eastern extent of the plume appears to end approximately 450 to 500 feet east of the Property (between 9th Avenue North and Westlake Avenue North) based on the relatively low concentrations of vinyl chloride detected in monitoring wells MW113 (0.41 micrograms per liter [$\mu\text{g/L}$]) and MW115 (0.75 $\mu\text{g/L}$). It appears a secondary source is present east of 9th Avenue North based on the dramatic increase of vinyl chloride concentration detected in monitoring well MW128 (250 $\mu\text{g/L}$), located on the corner of Westlake Avenue North and Broad Street. Several historical land use practices in this area could have resulted in a release of chlorinated solvents to the subsurface.

Concentrations of petroleum hydrocarbons exceed their respective cleanup levels in soil and groundwater samples collected on the northern portion of the Property and within the 8th Avenue North ROW. The petroleum contamination is attributed to the historical operation of refueling facilities on the Property and on the east-adjointing properties. The petroleum hydrocarbon contamination appears vertically limited to the shallow and intermediate water-bearing zones. The lateral distribution of petroleum contamination in soil and groundwater is bound to the west by monitoring well W-MW-04, to the north by monitoring wells MW125 and MW-9, to the east by monitoring well MW121, and to the south by monitoring well W-MW-02.

1.4 SELECTED CLEANUP ACTION ALTERNATIVE

As described in the Feasibility Study Report, Cleanup Action Alternative 1 is the recommended alternative, and therefore is the selected Cleanup Action Alternative for the Property. The cleanup action alternative includes source removal via electrical resistance heating and soil vapor extraction (ERH/SVE) and excavation on the Property, as well as the application of in situ reductive dechlorination to treat the on-Property groundwater plume. The selected cleanup action alternative meets the threshold requirements for cleanup actions set forth in WAC 173-340-360(3) and WAC 173-340-370.

The selected cleanup action alternative addresses the COCs in all media of concern: soil gas, soil, groundwater, and indoor air. The selected cleanup action alternative is protective of the indoor air inhalation pathway and of direct contact exposure (e.g., dermal contact, ingestion) with soil and groundwater. Treatment of the source area and active remediation of the contaminated groundwater beneath the Property demonstrate that the selected cleanup action alternative is protective of groundwater.

The selected Cleanup Action Alternative includes installing an ERH/SVE system on the Property within the shallow treatment zone; injecting an edible oil substrate (EOS) into the shallow, intermediate, and deep treatment zones to treat the groundwater using in situ reductive dechlorination; and excavating on-Property soil to an elevation of 30 feet North American Vertical Datum 1988 (NAVD88). As an interim action, the ERH/SVE system was operated on the Property from approximately August to December 2013, as detailed below in Section 3.1.

1.5 CLEANUP ACTION PLAN TASK DESCRIPTIONS

The tasks proposed as part of the CAP include the following:

- SAP and the Project-Specific Health and Safety Plan (HASP) development
- ERH and SVE system installation
- In situ reductive dechlorination of groundwater
- Excavation and land disposal of contaminated soil
- Site preparation and mobilization
- Well decommissioning
- Shoring installation
- Shoring and excavation
- Construction dewatering

2.0 PROJECT ORGANIZATION AND MANAGEMENT

This section describes the overall project management strategy for implementing the cleanup action.

To ensure efficient decision making for field sampling and laboratory analysis, key data collection decisions, decision criteria, process for decision-making, quality assurance/quality control (QA/QC) procedures, and responsibilities are described below and detailed in Table E-1.

These decision and communication plans will be followed by field personal under direction of the field coordinator and task manager. Site quality control to ensure proper communication and adherence to this SAP is discussed below in Section 10.0.

The cleanup action is being conducted by SoundEarth on behalf of Frontier Environmental Management, LLC (FEM). The following key personnel have been identified for the project. A summary of key personnel roles and responsibilities is provided in Table E-1.

Regulatory Agency. The Washington State Department of Ecology (Ecology) is the lead regulatory agency for the Site, as promulgated in MTCA. The cleanup action is being conducted as an independent remedial action in accordance with WAC 173-340-515 of MTCA. Ecology's Site Manager for the Project is:

Mr. Eugene Freeman
Washington State Department of Ecology

3190 160th Avenue Southeast
Bellevue, Washington 98008
425-649-7191
eufr461@ecy.wa.gov

Project Contact. SoundEarth has been contracted by FEM to plan and implement the cleanup action at the Property. The Project Contact for FEM is:

Ms. Nicole Christ
Frontier Environmental Management, LLC
1821 Blake Street, Suite 3C
Denver, Colorado 80202
720-746-7720
nchrist@Frontierem.com

Project Principal. The Project Principal provides oversight of all project activities and reviews all data and deliverables prior to their submittal to the project contact or regulatory agency. The Project Principal for SoundEarth is:

Mr. John R. Funderburk
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
jfunderburk@soundearthinc.com

Project Manager. The Project Manager has overall responsibility for developing the SAP, monitoring the quality of the technical and managerial aspects of the cleanup action, and implementing the SAP and corresponding corrective measures, where necessary. The Project Manager for SoundEarth is:

Ms. Tom Cammarata
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
tcammarata@soundearthinc.com

Laboratory Project Manager. The Laboratory Project Manager will provide analytical support and will be responsible for providing certified, pre-cleaned sample containers and sample preservatives (as appropriate) and for ensuring that all chemical analyses meet the project quality specifications detailed in this SAP. Friedman & Bruya Inc., of Seattle, Washington, has been contracted by SoundEarth to perform the chemical and physical analysis for compliance samples collected during the cleanup action. The Laboratory Project Manager is:

Mr. Mike Erdahl
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, Washington 98119
206-285-8282
merdahl@friedmanandbruya.com

Project QA/QC Officer. The Project QA/QC Officer has the responsibility to monitor and verify that the work is performed in accordance with the SAP and other applicable procedures. The Project QA/QC Officer has the responsibility to assess the effectiveness of the QA/QC program and to recommend modifications to the program when applicable. The Project QA/QC Officer is responsible for assuring that the personnel assigned to the project are trained relative to the requirements of the QA/QC program and for reviewing and verifying the disposition of nonconformance and corrective action reports. The Project QA/QC Officer for SoundEarth is:

Mr. Tom Cammarata
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
tcammarata@soundearthinc.com

Field Coordinator. The Field Coordinator (FC) will supervise field collection of all samples. The FC will ensure proper recording of sample locations, depths, and identification; sampling and handling requirements, including field decontamination procedures; physical evaluation and logging of samples; and completing of chain-of-custody forms. The FC will ensure that all SoundEarth field staff follows the SAP, will ensure that the physical evaluation and logging of soil is based on the Unified Soil Classification System (USCS), and will adhere to standardized methods for sample acceptability and physical description of samples. The FC will ensure that field staff maintains records of field sampling events using the forms included as Attachment A of this SAP. The FC will be responsible for proper completion and storage of field forms. The FC for SoundEarth is:

Ms. Courtney Porter
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
cporter@soundearthinc.com

Field Staff. Members of the field staff must understand and implement the QA/QC program, coordinate and participate in the field sampling activities, coordinate sample deliveries to the laboratory, and report any deviations from project plans as they relate to the cleanup action objectives as presented in the SAP. Major deviations from the SAP, such as the inability to collect a sample from a specific sampling

location, obtaining an insufficient sample volume for the required analyses, or a change in sampling method, must be reported to the Project Manager.

Subcontractors. All subcontractors will follow the protocols outlined in this SAP and will be overseen and directed by SoundEarth. The following subcontractors have been identified:

Private Utility Locator:

Mr. Kemp Garcia
Bravo Environmental
6437 South 144th Street
Tukwila, Washington 98168
425-424-9000
kgarcia@bravonw.com

Electrical Resistance Heating Contractor:

Mr. Thomas Powell
TRS Group, Inc.
2325 Hudson Street
Longview, Washington 98632
406-837-0862
tpowell@trthermalrs.com

3.0 CLEANUP ACTION PLAN FIELD PROGRAM

The objectives of the cleanup action have been established in consideration of human health and the environment and the future use of the Property, and include the following:

- Excavate on-Property soil containing PCE and other COCs at concentrations that present a risk to human health and the environment.
- Use in situ treatment methods to reduce COCs in groundwater beneath the Site exceeding cleanup levels.
- Prevent further off-Property migration of COCs in groundwater at concentrations exceeding cleanup levels.
- Provide engineering controls to prevent the unacceptable risks to human health posed by COCs in groundwater until cleanup levels are achieved.
- Acquire a determination of No Further Action.

A discussion of the field program is provided in the following sections.

3.1 INTERIM ACTION SUMMARY—ELECTRICAL RESISTIVE HEATING

As an interim action, the ERH/SVE system was used to remediate high concentrations of PCE, TCE, cis-1,2-DCE, trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride in soil and groundwater beneath the Property. Between April 29, and June 7, 2013, SoundEarth mobilized to the Property to observe the

advancement of 165 electrodes and 16 temperature points (TMPs) on the Property to encompass approximately 37,943 square feet (Figures 36 and 37 of the CAP). The electrodes were constructed in borings advanced to 0 feet NAVD88 (i.e., approximately 30 feet into the saturated zone) within the Property boundaries using standard hollow-stem auger (HSA) drilling techniques. The electrodes were comprised of Schedule 40 steel. The TMPs were installed to measure/monitor subsurface temperatures within the treatment area. Each of the TMPs consisted of Schedule 80 PVC pipe installed in borings advanced using standard HSA drilling techniques. After the electrodes and TMPs were installed, pipes for the collection of recovered soil vapor were connected to the electrodes to convey soil vapor from the treatment area by vacuum to a treatment building (Figure 37). The treatment system, consisting of the power control unit (PCU), condenser, two SVE blowers, and the granular-activated carbon units associated with treating the condensate and vapor generated by the system, was located on the northern portion of the Property (Figure 37).

After installation of the electrodes, TMPs, and the vapor extraction mechanical and treatment equipment, the system was subjected to startup and testing. After testing, power was applied to the Property continuously, except during system adjustments and routine maintenance. Thermocouples in the TMPs were monitored continuously using a PCU control and remote monitoring systems. The PCU is a variable transformer system capable of providing three simultaneous power outputs at automatically adjustable voltages. During operations, the heating contractor monitored the system remotely, provided weekly updates, and conducted site visits every other week for visual inspection and maintenance of the ERH components of the system. Additional trips were made, as necessary, to verify that the ERH system was functioning efficiently and effectively.

During ERH/SVE system operations, lower permeability soil lenses and areas with elevated chloride ion concentrations attract electricity first due to the higher electric conductivity. These areas are typically associated with the most contaminated portions of the Site where DNAPL tends to be present.

Once subsurface heating starts, the boiling points of various volatile organic compound (VOC)/water mixtures are reached in the following order: DNAPL in contact with water or soil moisture, followed by dissolved VOCs, and finally, uncontaminated groundwater. This is explained by Dalton's law of partial pressures.

When a VOC is immersed in water, the combined boiling point is depressed. Consequently, the VOC/water interface will boil when the vapor pressure of the VOC plus the vapor pressure of water are equal to the ambient pressure.

The boiling temperature of water that contains dissolved-phase VOCs is also depressed, depending on the VOC concentration. However, the boiling point depression due to dissolved VOCs is negligible unless the concentration is in the percent range.

The ERH/SVE system operated at the Property from approximately August to December 2014. During the treatment period approximately 12,000 pounds (5,443 kilograms [kg]) of chlorinated solvents as volatile organics were removed the subsurface. Figure 49 presents a graph that shows the mass of chlorinated solvents removed, the average site temperature, and removal rate during the course of treatment. The graph shows that at a design soil temperature of approximately 100 degrees Celsius the mass of chlorinated solvent removed from the Property reached asymptotic state of approximately

12,000 pounds (5,443 kg), meaning the ERH/SVE system reached its limit of mass removal because a majority of the original mass was removed. This conclusion is also supported by the fact that the removal rate substantially decreased at the asymptotic state.

After the completion of the ERH/SVE system operation, performance soil and groundwater sampling occurred on the Property, in accordance with sections 4.1.1 and 4.3.

3.2 CONSTRUCTION ACTIVITY SUMMARY—IN SITU REDUCTIVE DECHLORINATION OF GROUNDWATER

As illustrated on Figures 40 through 41 of the CAP, injection wells will be installed across the Property for source zone treatment and as barrier treatment walls along the eastern and southern Property boundaries for the purpose of injecting EOS to treat the residual solvent plume. EOS will be used as a carbon source to deplete dissolved oxygen present in the aquifer, generate free hydrogen, and sustain a robust anaerobic dechlorinating microbial population. The indigenous microbial population will consume oxygen and generate an anaerobic environment, which is needed for *Dehalococcoides* genus bacteria (*DHC*)-mediated reductive dechlorination to occur. Reductive dechlorination of chlorinated volatile organic compounds (CVOCs) occurs under strictly anaerobic conditions. Unlike in aerobic conditions where bacteria obtain energy by oxidizing reduced compounds (i.e., petroleum) while utilizing oxygen as the electron acceptor, reductive dechlorination is mediated by anaerobic bacteria (e.g., *DHC*), which obtain energy by oxidizing hydrogen and utilizing the CVOC as the electron acceptor. Through this process, chlorine atoms within the solvent molecules are replaced by hydrogen one by one. As such, PCE is reduced to TCE, which is reduced to cis-1,2-DCE, which is reduced to vinyl chloride, which is reduced to ethene, which is reduced to carbon dioxide as a detoxified final degradation product. The presence of degradation products in groundwater beneath the Property confirms that conditions are conducive to reductive dechlorination, and enhancing this naturally occurring process with EOS will significantly reduce the remedial time frame.

Based on observed Site conditions, it is anticipated that the groundwater plume south of Roy Street and east of 8th Avenue North will be addressed by natural attenuation. The treatment of the source zone with ERH and SVE, excavation of vadose zone soil, and the in situ groundwater treatment on the Property will significantly reduce the concentrations of CVOCs in groundwater beneath the Property and Site. Primary and secondary lines of evidence will be used to evaluate whether natural attenuation is occurring in the groundwater south of Roy Street and east of 8th Avenue North. Primary lines of evidence will include analytical data that define a contaminated groundwater plume as shrinking, stable, or expanding for the COCs (trend analyses and isoconcentrations maps). Secondary lines of evidence for natural attenuation will include the evaluation of geochemical indicators (dissolved oxygen, oxidation-reduction potential [ORP], pH, alkalinity, nitrate, total manganese, ferric and ferrous iron, sulfate, methane, ethene, ethane, chloride, and fatty acids) for naturally occurring biodegradation and estimates of natural attenuation rates and biodegradation capacity.

Currently, preliminary evidence indicates that biodegradation is occurring in off-Property wells based on the presence of PCE degradation products. Should natural attenuation prove insufficient in remediating off-Property groundwater, contingency injection wells would then be utilized.

The spacing of the injection wells along each transect is based on soil bulk density estimates developed by EOS Remediation, as well as the relatively permeable soil texture. This information was used to

develop the approximate volume of EOS necessary to support a zone of anaerobic dechlorination sufficient to degrade the chlorinated solvents within groundwater beneath the Site. Based on the reaction time of the EOS, injection transects will be spaced a distance equivalent to the distance travelled by groundwater in 3 years. The groundwater seepage velocity for each treatment zone was based on the average seepage velocity for each water-bearing zone and was estimated at 150 feet per year for the shallow treatment zone, and 25 feet per year for the intermediate treatment zone. The seepage velocity for each water-bearing zone is discussed in greater detail in Section 2.5.3 of the Feasibility Study Report prepared by SoundEarth.

Based on the seepage velocity in the shallow treatment zone, injection transects could be spaced up to 450 feet apart; however, a more aggressive network will be installed in the shallow source area to take advantage of the ERH electrodes and treat the expected residual mass that remains after implementation of the ERH treatment. The more aggressive injection approach in the source area will be accomplished by converting the 165 ERH electrodes, spaced on 17-foot centers, into injection points, as well as installing additional shallow injection points to the north of the ERH treatment boundary, with the positioning dependent on performance of the ERH system and its effect on mass outside of the direct treatment zone. If necessary, the same 17-foot-centers design associated with the ERH system will be utilized outside the ERH treatment boundary. However, wells in the shallow water-bearing zone could be placed on 25⁺-foot centers, based on a combination of total EOS volume required, the ability of the formation to accept the required EOS, and the groundwater seepage velocity.

The injection points installed within in the intermediate treatment zone will be placed on a north-south spacing of 20 feet and an east-west transect spacing of approximately 75 feet. The placement of these wells was designed to accomplish full coverage of EOS using a 1-foot to 5-foot dispersion ratio (dispersion rate: groundwater velocity) and the calculated seepage velocity discussed above. The barrier treatment wall injection points in both the shallow and intermediate treatment zones is designed for a single injection event with the wells placed on 10-foot centers to prevent further off-Property migration of COCs in groundwater at concentrations exceeding cleanup levels. This provides a level of conservatism since it is designed to treat all of the contamination coming from the Property, ignoring the extensive injection scheme implemented within the source area.

Manifold piping will be used to introduce EOS into each of the injection wells. Upon completion of the EOS injection on Property, the interior injection wells and those within the excavation footprint will be decommissioned and the remedial excavation would commence.

3.3 CONTAMINATED SOIL EXCAVATION

Prior to conducting excavation activities on the Property, performance soil samples were collected from the vadose zone to evaluate the effectiveness of the system in reducing concentrations of PCE to below 14 milligrams per kilogram (mg/kg; Washington State dangerous waste criteria) to allow for the disposal of the soil at a non-hazardous, Subtitle D landfill under Ecology's contained-in determination. Results are presented in Section 4.3 of the SAP.

The bulk excavation will commence after the completion of the following items:

- Acquiring a contained-in determination and profiling for waste disposal from Ecology.
- Installing temporary erosion and sediment control measures.

- Establishing site security and fencing.
- Preparing ingress and egress pathways.
- Decommissioning ERH electrodes, TMPs, existing monitoring wells, and EOS injection wells within the remedial excavation area.
- Installing the shoring system.

The excavation limits for the future development have not been determined as of the date of the SAP, but will involve excavating soil containing solvents from the vadose zone and transporting the excavated material off the Property for land disposal. To address petroleum-contaminated soil (PCS) detected above MTCA Method A cleanup levels beneath the northeast portion of the Property, this area would be overexcavated to approximately 20 feet NAVD88.

It is anticipated that all contaminated soil removed from the excavation area will meet the contained-in criteria for PCE for disposal at a Subtitle D disposal facility. To meet the requirements of the contained-in determination, detectable concentrations of PCE in soil must be below 14 mg/kg. No land ban dangerous waste (i.e., PCE concentrations greater than 60 mg/kg) or dangerous waste suitable for land disposal at a Resource Conservation and Recovery Act (RCRA) Subtitle C disposal facility (i.e., PCE concentrations greater than 14 mg/kg and less than 60 mg/kg) is anticipated to be generated during excavation activities. After the final grades are achieved, the vapor barrier would be incorporated as a component of the underground parking foundation.

3.3.1 Contingency Plan to Address Unknown Contamination

The presence of aesthetic impacts and conditions encountered by site employees and equipment operators during the construction excavation activities at the Property may be indicative of conditions associated with contaminated media. Equipment operators will be instructed to use these criteria to alert the site superintendent and construction manager of potential issues of previously unidentified contamination at the Property. Any of the following occurrences are considered common sense criteria that may require a mitigation or remediation response. These criteria include, but are not limited to the following:

- Obvious petroleum staining, sheen, or colored hues in soil or standing water.
- The presence of petroleum products or leachate of other chemicals.
- The presence of utility pipelines with sludge or trapped liquid indicating petroleum or chemical discharge sludge.
- The presence of buried pipes, conduits, tanks, or unexplained metallic objects or debris.
- Materials with a granular texture that suggests industrial origin.
- Vapors causing eye irritation or nose tingling or burning.
- White, chalky compounds or fine particulate soil layers.
- Presence of gasoline- or oil-like vapor or odor.
- Burnt debris or the presence of slag-like material.

Any criteria identified by on-site personnel will be evaluated and, as appropriate, a sampling plan will be developed to properly characterize and manage the material in accordance with state and federal regulations.

3.3.2 Construction Dewatering

Extensive dewatering is not anticipated due to the relatively shallow limits of the excavation. The overexcavation of PCS will require dewatering to reach 20 feet NAVD88 because shallow groundwater beneath the Property is at approximately 30 feet NAVD88. As the excavation proceeds, it will encounter the shallow water-bearing zone across the Property. The water will be collected at a low point in the excavation where it will be pumped to a water storage tank at the ground surface for treatment and disposal.

4.0 PERFORMANCE AND CONFIRMATIONAL MONITORING

Performance and confirmational monitoring were and will be conducted as part of the cleanup action. Details regarding procedures for sample collection and handling are described below.

4.1 PERFORMANCE GROUNDWATER MONITORING

Performance groundwater monitoring was and will be conducted on and off Property as part of the cleanup action.

4.1.1 Performance Groundwater Monitoring—On Property

Between May 10 and June 4, 2013, SoundEarth field staff observed the advancement of nine monitoring wells (F5, F9, F13, G12, J5, J15, K8, M15, and N7) on the Property, within the ERH/SVE treatment area. The wells were installed to a depth of approximately 40 feet bgs (0 feet NAVD88) and screened from approximately 10 feet to 40 feet bgs. Each monitoring well was constructed of 1-inch-diameter blank stainless steel casing, flush-threaded to 0.010-inch slotted well screen. The bottom of each of the wells was fitted with a threaded bottom cap. The annulus of the monitoring wells was filled with #10/20 silica sand to 2 feet above the top of the screened interval. The wells were completed at the surface with 8 feet of neat cement grout.

The monitoring wells were developed by SoundEarth field staff on July 1, 2013, by surging and purging until a minimum of five well volumes were removed and/or the groundwater no longer appeared turbid. Turbidity was measured visually by field staff conducting development activities.

Groundwater samples were collected and handled in accordance with the U.S. Environmental Protection Agency (EPA) guidance document, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*. After collection, groundwater samples were labeled with a unique sample identifier (ID), placed on ice in a cooler, and delivered to Friedman & Bruya, Inc. under standard chain-of-custody protocols for laboratory analysis. Groundwater samples were submitted for laboratory analysis of VOCs, including PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride by EPA Method 8260C.

Groundwater samples were collected from the nine Shallow Zone monitoring wells (F5, F9, F13, G12, J5, J15, K8, M15, and N7) on July 19, 2013; prior to the start of the SVE/ERH system as a baseline groundwater monitoring. During the operation of the ERH/SVE system performance

samples were collected monthly starting in October 2013, depending on the availability of water within each given well due to the amount of water that had volatilized in the subsurface from the ERH/SVE system, to monitor the effectiveness of the system.

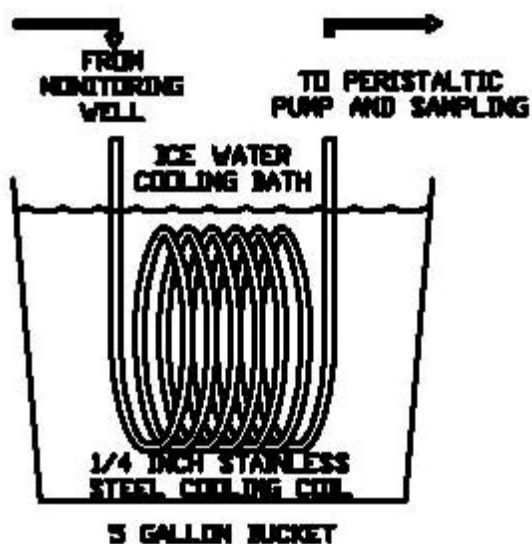
After the completion of the ERH/SVE system, Shallow Zone groundwater samples were collected to assess the performance of the ERH/SVE system. Groundwater samples were collected from monitoring wells F13, J15, and M15 on March 7, 2013. The most recent set of groundwater samples were collected from on-Property monitoring wells F9, F13, J5, J15, K8, and M15 on June 16, and 17, 2015. Results of the 2015 performance groundwater sampling are presented in the 2015 draft CAP.

4.1.1.1 Sample Collection and Handling Procedures

Groundwater that was heated during the ERH process presented both a potential safety hazard and a potential concern for collecting representative samples. If a boiling or near-boiling liquid is collected in a volatile organic analysis (VOA) vial, the formation of air bubbles as the sample cools within the VOA vial renders the sample non-representative. In addition, hot liquids collected in the VOA vial may result in failure of the VOA septum.

An ice bath was designed to cool the groundwater prior to sampling while limiting the impact on groundwater chemistry and contaminant concentrations. Cooling the groundwater prior to sampling allowed for both the safe handling of high water temperatures and prevented the formation of VOC bubbles in the VOA vial after sample collection.

Prior to sampling, a dedicated cooling coil for each well was constructed by wrapping a 10-foot length of 0.25-inch-diameter, stainless steel or copper tubing six full turns around a 4-inch-diameter pipe. The ends of the tubing were fashioned such that both ends of the tubing extend upward, as shown in the diagram below.



In addition, SoundEarth field staff followed the procedures described below when collecting groundwater samples:

- Each monitoring well was purged at a low-flow rate (100 to 300 milliliters per minute) using a bladder pump and dedicated polyethylene tubing. The pump intake was placed at the approximate center of the screened interval. Temperature, pH, specific conductivity, dissolved oxygen, and ORP was monitored during purging using a water quality meter equipped with a flow-through cell to determine when these parameters stabilized.
- Groundwater samples were collected directly from the pump outlet following stabilization of temperature, pH, specific conductance, turbidity, dissolved oxygen, and ORP. If the monitoring well was completely dewatered during purging, samples were collected when the groundwater in the well had recovered to at least 80 percent of the prepurge casing volume.
- The sample containers, as described in Table E-2, were filled directly if collected from a pump. Care was taken not to handle the seal or lid of the container when decanting the sample into the containers. The containers were filled completely to eliminate any headspace, and the seals/lid will be secured.
- Each sample container was labeled and handled following the protocols described in Section 5.0, Sample Handling and Quality Control Procedures.
- The chain-of-custody protocols were maintained during sample transport and submittal to the laboratory.

Field personnel were required to prepare Groundwater Purge and Sample Forms during groundwater monitoring and sampling activities. The forms included water quality measurements, including pH, temperature, dissolved oxygen, specific conductance, ORP, and/or turbidity. In addition, the sample ID, date of sample collection, and analyses were recorded on the form. An example of the Groundwater Purge and Sample Form is included in Attachment A.

4.1.2 Performance Groundwater Monitoring—Off Property

Monitoring wells to be included in the natural attenuation network are as follows:

- Intermediate Water-Bearing Zone: MW107, MW108, MW109, MW110, MW111, MW112, MW115, MW116, MW119, MW120, and MW128
- Deep Water-Bearing Zone: MW102, MW103, MW104, MW105, MW106, MW113, and MW122

4.1.2.1 Sample Collection and Handling Procedures

Groundwater samples will be collected quarterly and handled in accordance with the 1996 EPA guidance document, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* at least 24 hours following well development. SoundEarth field staff will follow the procedures described below when collecting groundwater samples:

- The locking well cap from the monitoring well will be removed and the groundwater level in the well will be allowed to equilibrate to atmospheric pressure for a minimum of 20 minutes.

- The depth to groundwater in the monitoring well will be measured relative to the top of well casing to the nearest 0.01 foot using an electronic water-level meter. The depth to the monitoring well bottom will also be measured to evaluate siltation of the monitoring well and to calculate the estimated purge water volume. All nondisposable equipment will be decontaminated between uses.
- Each monitoring well will be purged at a low-flow rate (100 to 300 milliliters per minute) using a bladder pump and dedicated polyethylene tubing. The pump intake will be placed at the approximate center of the screened interval. Temperature, pH, specific conductivity, dissolved oxygen, and ORP will be monitored during purging using a water quality meter equipped with a flow-through cell while purging to determine when stabilization of these parameters occurs.
- Groundwater samples will be collected directly from the pump outlet following stabilization of temperature, pH, specific conductance, turbidity, dissolved oxygen, and oxygen-reduction potential. If the monitoring well is completely dewatered during purging, samples will be collected when the groundwater in the well has recovered to at least 80 percent of the prepurge casing volume.
- If low-flow sampling methods are not practical, the monitoring well will be allowed to recharge for no longer than 2 hours following cessation of purging and will be sampled using a dedicated, disposable, polyethylene double-check valve bailer and sampling cord.
- The sample containers, as described in Table E-2, will be filled directly if collected from a pump, or the water samples will be transferred immediately from the bailer into laboratory-supplied sample containers, taking care to minimize turbulence. Care will be taken not to handle the seal or lid of the container when decanting the sample into the containers. The containers will be filled completely to eliminate any headspace, and the seals/lid will be secured.
- Each sample container will be labeled and handled following the protocols described in Section 5.0, Sample Handling and Quality Control Procedures.
- The chain-of-custody protocols will be maintained during sample transport and submittal to the laboratory.
- The well cap and monument will be secured following sampling. Any damaged or defective well caps or monuments will be noted and scheduled for replacement, if necessary.

Field personnel will be required to prepare Groundwater Purge and Sample Forms during groundwater monitoring and sampling activities. The forms will include depth to groundwater and total depth measurements, as well as water quality measurements, including pH, temperature, dissolved oxygen, specific conductance, ORP, and/or turbidity. In addition, the sample ID, date of sample collection, and analyses will be recorded on the form. An example of the Groundwater Purge and Sample Form is included in Attachment A.

4.2 CONFIRMATIONAL GROUNDWATER MONITORING

Existing off-Property monitoring wells will be utilized to establish the points of compliance for the Site-wide plume. Each monitoring well will be constructed of 2-inch-diameter blank PVC casing, flush-threaded to 0.010-inch slotted well screen. The bottom of each well will be fitted with a threaded PVC bottom cap, and the top of each well will be fitted with a locking compression-fit well cap. The annulus of the monitoring wells will be filled with #10/20 silica sand to a minimum height of 1 foot above the top of the screened interval. A bentonite seal with a minimum thickness of 1 foot will be installed above the sand pack. The wells will be completed at the surface with a flush-mounted, traffic-rated well box set in concrete. The well completion details will be recorded in boring logs, examples of which are provided in Attachment A of this SAP.

4.2.1 Sample Collection and Handling Procedures

Sampling collection and handling procedures are the same as those discussed above in section 4.1.2.1.

4.3 PERFORMANCE SOIL SAMPLING—ERH/SVE

On February 12, 2014, after treatment by ERH/SVE was completed, SoundEarth observed the advancement of five direct-push borings (P02 to P06) adjacent to and/or proximate to borings GW-1 and B-9 (the Hot Spot Area). The purpose of these borings was to confirm that the ERH/SVE system reduced the concentrations of PCE in the soil to less than 14 mg/kg in this area of the Property (with highest concentrations of PCE in soil on-Property). Two soil samples were collected from each boring and analyzed for chlorinated solvents. Sample depths ranged from 5 to 10 feet bgs. The analytical results of these samples were used to assess whether or not the cleanup goals had been achieved. The high concentration of PCE in a confirmation soil sample was 1.2 mg/kg. The sample was collected from boring P02 at a depth of 7.5 bgs. Concentrations of PCE in all other samples ranged from less than 0.025 to 0.55 mg/kg. Analytical results, sample depths, analytical test methods, and applicable MTCA cleanup levels are presented in Table 20 and Figure 50 of the CAP.

4.3.1 Sample Collection and Handling Procedures

Borings were advanced using direct-push probe rig and sampled at approximate 2.5-foot intervals from ground surface to explored maximum of 12.5 feet bgs. After the maximum depth was achieved in each sample interval, relatively undisturbed, discrete soil samples were collected from the soil borings. The soil was classified using the USCS. Soil characteristics, including moisture content, relative density, texture, and color, were recorded on boring logs. The depths at which changes in soil lithology were observed and at what depth groundwater was first encountered were also included on the boring logs. Selected portions of recovered soil core samples were placed in a plastic bag so the presence or absence of VOCs could be quantified using a photoionization detector.

4.4 PERFORMANCE AND CONFIRMATIONAL SOIL SAMPLING—REMEDIAL EXCAVATION (PCS)

Performance and conformational monitoring for soil will be conducted during the remedial excavation to confirm that all of the PCS has been removed from the northeast corner of the Property. It is anticipated that the remedial excavation will extend to an approximate depth of 20 feet NAVD88 (20 feet bgs).

4.4.1 Sample Collection and Handling Procedures

Soil samples will be collected directly from the sidewalls and/or bottom of the excavation using either stainless steel or plastic sampling tools. Soil samples collected at depths of less than 4 feet bgs will be collected manually. Samples collected at depths below 4 feet bgs will be collected with the backhoe bucket unless engineering controls are in place that allow for manual sample collection at depths greater than 4 feet bgs. The location of these soil samples will be selected based on their position relative to a soil sampling grid as described in section 5.1.1.

All non-dedicated sampling equipment will be decontaminated between uses. The samples will be submitted for laboratory analysis, and the analytical results will be used to assess when the points of compliance for soil have been achieved within the dangerous waste excavation area.

5.0 SAMPLE HANDLING AND QUALITY CONTROL PROCEDURES

Sections 5.1 through 5.5 summarize sample labeling, containers, handling, chain of custody, and field quality control procedures to be applied during the cleanup action.

5.1 SAMPLE IDENTIFICATION

Each sample collected during the cleanup action will be assigned a unique sample ID and number. Sample ID labels will be filled out and affixed to appropriate containers immediately prior to sample collection. The label is filled out in indelible ink and will include the following information: media, date, time sampled, sample ID and number, project name, project number, sampler's initials, and analyte preservative(s) if any. An example of the Sample ID Label is included in Attachment A of this SAP.

5.1.1 Soil

Soil samples collected to assess the performance of the ERH/SVE System were identified by the boring and depth at which they were collected. For example, a soil sample collected from boring P02 at a depth of 10 feet bgs would be identified as P02-10. Results for soil samples collected to assess the performance of the ERH/SVE System are presented in the CAP.

Samples collected during the remedial excavation of PCS will be identified by their position relative to a grid measuring 120 feet (east–west) by 100 feet (north–south), and segregated into 30 discrete grid cells (A1 through E6), each measuring 20 feet by 20 feet (Figure E-2).

Bottom and sidewall samples collected from the PCS remedial excavation will be assigned a unique identifier that will include the components listed below:

- The grid cell identification (e.g., A1)
- The compass heading of the sidewall (e.g., N)
- The sample type (e.g., bottom “B”, sidewall “SW”)
- The number of samples collected in that area (e.g., 01, 02, 03)
- The depth in feet bgs (e.g., 16)

For example, the first soil sample collected from the bottom of the remedial excavation in grid cell A1 at a depth of 16 feet bgs would be identified as A1B01-16.

Likewise, a soil sample collected from the north side wall of grid cell E6 at a depth of 10 feet would be identified as E6NSW01-10. If this sidewall required overexcavation and further sampling within the same grid cell and depth, a second sample would be collected and would be identified as E6NSW02-10. The sample identification would be recorded on the Sample ID Label, Field Report form, Sample Summary Form, and Sample Chain of Custody form.

5.1.2 Groundwater

Groundwater sample IDs will include a prefix of the well identification and the date. For example, the groundwater sample collected from monitoring well MW14 on October 22, 2014, would be numbered MW14-20141022. The sample identification will be placed on the Sample ID label, the Field Report form, the Groundwater Purge and Sample Form, and the Sample Chain of Custody form.

5.2 DECONTAMINATION PROCEDURES

Decontamination of all nondisposable tools and equipment will be conducted prior to each sampling event and between each sampling location, including stainless steel bowls/containers, stainless steel spoons/spatulas, stainless steel core catcher, hack saw blades, and drill bits. A sufficient supply of pre-decontaminated small equipment will be mobilized to the sampling locations to minimize the need for performing field decontamination. Field personnel will change disposable latex or nitrile gloves before collecting each sample and before decontamination procedures and will take precautions to prevent contaminating themselves with water used in the decontamination process. The following steps will be followed to decontaminate reusable soil and groundwater sampling equipment:

- The equipment will be washed with a solution of Alconox (or an equivalent detergent) and water.
- The equipment will be rinsed with tap water.
- A final rinse will be conducted with distilled or deionized water.

Residual sample media from the equipment, used decontamination solutions and associated materials, and disposable contaminated media will be disposed of according to the procedures described in Section 7.0, Management of Investigation-Derived Waste.

5.3 SAMPLE CONTAINER AND HANDLING PROCEDURES

Soil samples collected for analysis of VOCs will be collected in accordance with EPA Method 5035. Groundwater samples will be collected in general accordance with the EPA's 1996 guidance *Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures*. Required containers, preservation, and holding times for each anticipated analysis are listed in Table E-2.

SoundEarth personnel will be responsible for following the container handling procedures below:

- Each sample container will be labeled and handled with the date and time sampled, well identification number, project number, and preservative(s), if any.
- All sample collection information will be documented on a Sample Chain of Custody form; the sample will be placed in a cooler chilled to near 4 degrees Celsius and transported to the laboratory.

The field coordinator will check all container labels, chain of custody for entries, and field notes for completeness and accuracy at the end of each day.

5.4 SAMPLE CHAIN-OF-CUSTODY PROCEDURES

The written procedures that will be followed whenever samples are collected, transferred, stored, analyzed, or destroyed are designed to create an accurate written record that can be used to trace the possession and handling of the sample from the moment of its collection through analysis and reporting of analytical values. This written record, the Sample Chain of Custody form, will be filled out by the field sampling team at the time the sample is obtained. An example of the Sample Chain of Custody form is included in Attachment A.

All samples submitted to the laboratory are accompanied by the Sample Chain of Custody form. This form is checked for accuracy and completeness and then signed and dated by the laboratory sample custodian accepting the sample. At the laboratory, each sample is assigned a unique, sequential laboratory identification number that is stamped or written on the Sample Chain of Custody form.

All samples are held under internal chain of custody in the sample control room using the appropriate storage technique (i.e., ambient, refrigeration, frozen). The Laboratory Project Manager assigned to a particular client will be responsible for tracking the status of the samples throughout the laboratory. Samples will be signed out of the sample control room in a sample control logbook by the analyst who will prepare the samples for analysis.

The Sample Chain of Custody form will include the following information: client, project name and number, date and time sampled, sample ID, sampler's initials, analysis, and analyte preservative(s), if any.

5.5 FIELD QUALITY ASSURANCE SAMPLING

Field and laboratory activities will be conducted in such a manner that the results be valid and meet the data quality objectives for this project. QA/QC groundwater samples will be collected during the course of the groundwater monitoring to provide for data validation as detailed in Section 8.0. QA/QC samples will consist of field duplicates. QA/QC samples will be collected and sent to the laboratory along with the primary field samples. Based on the sampling frequency and number of groundwater samples anticipated, it is estimated that one groundwater field duplicate sample will be submitted per sampling event. The QA/QC samples will be assigned a unique sample identifier and number. The number will include a prefix of MW99 for field duplicates. For example, a field duplicate collected on October 22, 2014, would be labeled MW99-20141022. SoundEarth will note the locations of the field duplicates in the field notes.

6.0 ANALYTICAL TESTING

All samples will be submitted to Friedman & Bruya, Inc., an Ecology-accredited analytical laboratory, on a standard 7- to 10-day turnaround time. All chemical and physical testing will adhere to EPA's SW-846 QA/QC procedures and analysis protocols or follow the appropriate Ecology methods. In completing chemical analyses for this project, the laboratory will meet the following minimum requirements:

- Adhere to the methods outlined in this SAP, including methods referenced for each analytical procedure.
- Provide a detailed discussion of any modifications made to previously approved analytical methods.
- Deliver PDF and electronic data as specified.
- Meet reporting requirements for deliverables.
- Meet turnaround times for deliverables.
- Implement QA/QC procedures discussed in Section 8.0, including data quality objectives (DQOs), laboratory quality control requirements, and performance evaluation testing requirements.
- Notify the Project QA/QC Officer of any QA/QC problems when they are identified to allow for quick resolution.
- Allow laboratory and data audits to be performed, if deemed necessary.

Copies of the *Laboratory Quality Assurance Manual* from Friedman & Bruya, Inc. are on file at SoundEarth's offices for review and reference and will be followed throughout the cleanup action. Access to laboratory personnel, equipment, and records pertaining to samples, collection, transportation, and analysis can be provided. Container requirements, holding times, and preservation methods for soil and water are summarized in Table E-2.

Sample laboratory analytical results for each analyte will be compared to regulatory limits applicable to the cleanup action. A detailed description of the analytical methods, laboratory practical quantitation limits (PQLs), and applicable regulatory limits for each analyte is provided in Table E-3 and is summarized in the Sections 6.1 through 6.3 below for each medium to be sampled during the cleanup action.

6.1 SOIL

Select soil samples collected from the PCS remedial excavation will be submitted for laboratory analysis of GRPH by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx; DRPH and ORPH by Method NWTPH-Dx; and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B or 8260C. Performance soil samples collected from borings advanced in the treatment area, as described in Section 4.3 of the SAP, were submitted for laboratory analysis of CVOCs by EPA Method 8260C.

6.2 GROUNDWATER

Select groundwater samples will be submitted for laboratory analysis of CVOCs by EPA Method 8260C (unpreserved sample containers will be used for vinyl chloride analyses); GRPH by Method NWTPH-Gx, DRPH and ORPH by Method NWTPH-Dx; and BTEX by EPA Method 8021B or 8260C.

7.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Contaminated soil, groundwater, and disposable equipment generated during the cleanup action will be handled in accordance with a contained-in determination and/or in accordance with state and federal

regulations. The procedures for managing investigation-derived waste for the expected waste streams are discussed in Sections 7.1 through 7.3 below.

7.1 SOIL

Wastes generated during the remedial activities require analytical testing before disposal. Generally, the treatment, storage, and disposal facility (TSDF) receiving the waste specifies the minimum number of samples and analyses before accepting wastes from a site; at the Property, data generated during the remedial investigation activities will be sufficient to develop a waste profile. Wastes that will be generated from the remedial action and destined for off-Site disposal include the following:

- Soil contaminated with PCE and its degradation products; GRPH, DRPH, ORPH, and associated compounds
- Contaminated groundwater from excavation dewatering
- Contaminated personal protective equipment
- Decontamination solutions
- Miscellaneous solid wastes

Each waste stream will be profiled separately in accordance with the minimum waste analyses requirements of the respective permitted TSDF. If unforeseen soil conditions are encountered, additional waste profiling may be required to ensure proper classification and disposal. The solvent-contaminated soil will be disposed of in accordance with the contained-in determination. Material Import and Export Summary forms (Attachment A of this SAP) demonstrating compliance with the determination will be submitted to Ecology upon receipts of the disposal tickets.

Soil waste generated during drilling will be stored in labeled 55-gallon drums or loaded onto trucks for disposal. Composite soil samples will be collected from the drums for waste characterization purposes. The drums will be labeled with the source (soil boring ID and depths) and disposed of in accordance with the requirements based on the analytical results of sampling. A Hazardous or Non-Hazardous Waste Label will be affixed to each drum, and the number and type of drums will be documented on a Drum Inventory Sheet (Attachment A).

7.2 WATER

The ERH/SVE system used heat to volatilize contaminants and groundwater, which were collected under vacuum by a vapor treatment system. In order to optimize vapor-phase treatment, the steam produced during the heating process at the Property was condensed before vapor treatment began. This condensation was carried out within a heat exchanger that was cooled with an evaporative cooling tower. The combined effluent from the process was approximately 8 gallons per minute (gpm). It included 7 gpm of condensate and 1 gpm of cooling tower blowdown. Additional wastewater was generated from groundwater purging and sampling.

All wastewater was disposed of into the municipal sanitary sewer under King County Discharge Authorization #4256-01.

7.3 DISPOSABLES

Disposable personal protective clothing (e.g., TYVEK suits, rubber gloves, and boot covers) and disposable sampling devices (e.g., plastic tubing, plastic scoops, and bailers) was and will be placed in plastic garbage bags and disposed of as nonhazardous waste.

8.0 DATA QUALITY OBJECTIVES

Field and laboratory activities will be conducted in such a manner that the results will be valid and will meet the data quality objectives for this project. Guidance for QA/QC will be derived from the protocols developed for the cited methods within EPA's documents *Test Methods for Evaluating of Solid Waste Physical/Chemical Methods, also known SW-846*, and the National Contract Laboratory Review Program, National Functional Guidelines for Organic Data Review. The data quality objectives are designed to:

- Assist the project manager and project team to focus on the factors affecting data quality during the planning stage of the project.
- Facilitate communication among field, laboratory, and project staff as the project progresses.
- Document the planning, implementation, and assessment procedures for QA/QC activities for the cleanup action.
- Verify that the DQOs are achieved.
- Provide a record of the project to facilitate final report preparation.

The DQOs for the project include both qualitative and quantitative objectives, which define the appropriate type of data and specify the tolerable levels of potential decision errors that will be used as a basis for establishing the quality and quantity of data needed to support the cleanup action. To verify that the DQOs are achieved, this SAP details aspects of sample collection and analysis including analytical methods, QA/QC procedures, and data quality reviews. This SAP describes both qualitative and quantitative measures of data quality to verify that the DQOs are achieved.

Detailed QA/QC procedures in the field and at the laboratory are provided in the following sections. The DQOs for the cleanup action will be used to develop and implement procedures to verify that data collected are of sufficient quality to adequately address the objectives of the cleanup action. All observations and measurements will be made and recorded in such a manner as to yield results representative of the media and conditions observed and/or measured. Goals for representativeness will be met by verifying that sampling locations are selected properly, that a sufficient number of samples are collected, and that field screening and laboratory analyses are conducted properly.

The quality of the laboratory data will be assessed by precision, accuracy, representativeness, completeness, comparability, and sensitivity. Definitions of these parameters and the applicable QC procedures are described in Sections 8.1 through 8.6. Quantitative DQOs are provided following each definition. Laboratory DQOs have been established by the analytical laboratory. Applicable quantitative goals for these DQOs are listed in Table E-4.

8.1 PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of two or more measurements compared to their average values. Precision is calculated from results of duplicate sample analyses. Precision is quantitatively expressed as the relative percent difference (RPD) and is calculated as follows:

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2)/2} \times 100$$

Where:

RPD = relative percent difference

C₁ = larger of the two duplicate results (i.e., the highest detected concentration)

C₂ = smaller of the two duplicate results (i.e., the lowest detected concentration)

There are no specific RPD criteria for organic chemical analyses. Quantitative RPD criteria for organic analyses will be based on laboratory-derived control limits.

8.2 ACCURACY

Accuracy is a measure of the closeness (bias) of the measured value to the true value. The accuracy of chemical analytical results is assessed by “spiking” samples in the laboratory with known standards (a surrogate or matrix spike of known concentration) and determining the percent recovery. The accuracy is measured as the percent recovery (%R) and is calculated as follows:

$$\%R = \frac{(M_{sa} - M_{ua})}{C_{sa}} \times 100$$

Where:

%R = percent recovery

M_{sa} = measured concentration in spiked aliquot

M_{ua} = measured concentration in unspiked aliquot

C_{sa} = actual concentration of spike added

Laboratory matrix spikes and surrogates will be carried out at the analytical laboratory in accordance with EPA SW-846 and Ecology methods and procedures for inorganic and organic chemical analyses. The frequency of matrix spikes and matrix spike duplicates will each be one per batch of 20 samples or less for soil samples. Quantitative percent recovery criteria for organic analyses will be based on laboratory-derived control limits for surrogate recovery and matrix spike results.

The accuracy of sample results can also be affected by the introduction of contaminants to the sample during collection, handling, or analysis. Contamination of the sample can occur because of improperly cleaned sampling equipment, exposing samples to chemical concentrations in the field or during transport to the laboratory, or because of chemical concentrations in the laboratory. To demonstrate that the samples collected are not contaminated, laboratory method blank samples will be analyzed.

The laboratory will run method blanks at a minimum frequency of 5 percent or one per batch to assess potential contamination of the sample within the laboratory.

8.3 REPRESENTATIVENESS

Representativeness is a qualitative assessment of how closely the measured results reflect the actual concentration or distribution of the constituent concentrations in the matrix sampled. The sampling plan design, sample collection techniques, sample handling protocols, sample analysis methods, and data review procedures have been developed to verify that the results obtained are representative of the site conditions. These issues are addressed in detail in Section 6.0, Analytical Testing and Section 10.0, Quality Control Procedures.

8.4 COMPLETENESS

Completeness is defined as the percentage of measurements judged to be valid. Results will be considered valid if they are not rejected during data validation (Section 10.0, Quality Control Procedures). Completeness is calculated as follows:

$$C = \frac{(Number\ of\ Valid\ Measurements)}{(Total\ Number\ of\ Measurements)} \times 100$$

Objectives for completeness are based, in part, on the subsequent uses of the data (i.e., the more critical the use, the greater the completeness objective). The objectives for completeness of samples are expressed as percentages, which refer to the minimum acceptable percentages of samples received at the laboratory in good condition and acceptable for analysis. The objectives of completeness for other samples are 95 percent for soil and water samples. These objectives will be met through the use of proper sample containers, proper sample packaging procedures to prevent breakage during shipment, proper sample preservation, and proper labeling and chain-of-custody procedures. A loss of 5 to 10 percent of intended samples is common, and the goals set are sufficient for intended data uses.

The objectives for completeness of chemical analyses are also expressed as percentages and refer to the percentages of analytical requests for which usable analytical data are produced. The initial objective for completeness of chemical analyses in the laboratory is 95 percent.

8.5 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. The use of standard Ecology and EPA methods and procedures for both sample collection and laboratory analysis will make the data collected comparable to both internal and other data generated.

8.6 SENSITIVITY

Analytical sensitivities are measured by PQLs, which are defined as the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. PQLs are determined by the laboratory. The specific analytes and their corresponding PQLs that will be required for the cleanup action are presented in Table E-3. The detection or reporting limits for actual samples may be higher depending on the sample matrix and laboratory dilution factors.

9.0 DATA COLLECTION

This section outlines the procedures to be followed for the inventory, control, storage, and retrieval of data collected during performance of the cleanup action. The procedures contained in this SAP are designed to verify that the integrity of the collected data is maintained for subsequent use. Moreover, project-tracking data (e.g., schedules and progress reports) will be maintained to monitor, manage, and document the progress of the cleanup action.

9.1 DATA COLLECTION APPROACH

Procedures that will be used to collect, preserve, transport, and store samples are described in Section 5.0, Sample Handling and Quality Control Procedures. All sampling protocols will be performed in accordance with generally accepted environmental practices and will meet or exceed current regulatory standards and guidelines. Sampling procedures may be modified, if necessary, to satisfy amendments to current regulations, methods, or guidelines. The data collection approach for key elements of the cleanup action field program will verify the project DQOs are met or exceeded. The key elements include soil samples collected and analytical results used to demonstrate that the concentrations of COCs at the limits of the remedial excavation are below applicable cleanup levels as defined in the SAP. The total number of samples collected and specific analyses to be performed will be based on field screening results, field observations, and analytical results for performance and confirmational monitoring.

9.2 DATA TYPES

A variety of data will be generated during the cleanup action, including sampling and analytical data. The laboratory analytical data will be transmitted to SoundEarth as an electronic file, in addition to a hardcopy laboratory data report. This method will facilitate the subsequent validation and analysis of these data while avoiding transcription errors that may occur with computer data entry. Examples of data types include manually recorded field data, such as boring logs, and electronically reported laboratory data.

9.3 DATA TRANSFER

Procedures controlling the receipt and distribution of incoming data packages to SoundEarth and outgoing data reports from SoundEarth include the following:

- Incoming documents will be date-stamped and filed. Correspondence and transmittal letters for all reports, maps, and data will be filed chronologically. Data packages, such as those from field personnel, laboratories (such as soil data) and surveyors (elevation data), will be filed by project task, subject heading, and date. If distribution is required, the appropriate number of copies will be made and distributed to the appropriate persons or agencies.
- A transmittal sheet will be attached to all project data and reports sent out. A copy of each transmittal sheet will be kept in the administrative file and the project file. The Project Manager and Project QA/QC Officer will review all outgoing reports and maps.

9.4 DATA INVENTORY

Procedures for filing, storage, and retrieval of project data and reports are discussed below.

9.4.1 Document Filing and Storage

As previously discussed, project files and raw data files will be maintained at SoundEarth's office. Files will be organized by project tasks or subject heading and maintained by the document control clerk. Hard copy project files will be archived for a minimum of 3 years after completion of the project. Electronic copies of files will be maintained in a project directory and backed up daily, weekly, and monthly.

9.4.2 Access to Project Files

Access to project files will be controlled by and limited to FEM and its authorized representatives, Ecology, and SoundEarth personnel. When a hard copy file is removed for use, a sign-out procedure will be used to track custody. If a document is to be used for a long period, a copy will be used, and the original will be returned to the project file. Electronic access to final reports, figures, and tables will be write-protected in the project directory.

9.5 DATA VALIDATION

Data quality review will be performed where applicable in accordance with the current EPA guidance as set forth in *Guidance on Environmental Data Verification and Data Validation* (EPA QA/G-8, EPA/240/R-02-004, November 2002). The following types of QC information will be reviewed, as appropriate:

- Method deviations
- Sample extraction and holding times
- Method reporting limits
- Blank samples (equipment rinsate and laboratory method)
- Duplicate samples
- Matrix spike/matrix spike duplicate samples (accuracy)
- Surrogate recoveries
- Percent completeness and RPD (precision)
- A quality assurance review of the final analytical data packages for samples collected during the cleanup action

9.6 DATA REDUCTION AND ANALYSIS

The Project Manager and Project QA/QC Officer are responsible for data review and validation. Data validation parameters are outlined as quantitative DQOs in Section 8.0, Data Quality Objectives. The particular type of analyses and presentation method selected for any given data set will depend on the type, quantity, quality, and prospective use of the data in question. The analysis of the project data will require data reduction for the preparation of tables, charts, and maps. To verify that data are accurately transferred during the reduction process, two data reviews will be performed, one by the Project QA/QC Officer or Project Manager and another by the Project Principal, prior to issuing the documents. Any incorrect transfers of data will be highlighted and changed.

10.0 QUALITY CONTROL PROCEDURES

This section provides a description of the QC procedures for both field activities and laboratory analysis. The field QC procedures include standard operating procedures for sample collection and handling, equipment calibration, and field QC samples.

10.1 FIELD QUALITY CONTROL

Field QC samples (e.g., duplicate samples) will be collected during this project and will follow the standard operating procedures during field screening activities. The procedural basis for these field data collection activities will be documented on the field report forms, as described in Section 12.1, Field Documentation. Any deviations from the established protocols will be documented on the field report forms.

QA/QC groundwater samples will be collected during the cleanup action to provide for data validation, as described in Section 8.0 Data Quality Objectives. QA/QC samples will consist of field duplicates. QA/QC samples will be collected and shipped to the laboratory along with the primary field samples. Based on the sampling frequency and number of groundwater samples anticipated, it is estimated that one field duplicate sample will be submitted per sampling event. The QA/QC samples will be assigned a unique sample identifier and number. The number will include a prefix of MW99 or MW98 (if two field duplicates are collected) for field duplicates. For example, a field duplicate collected on October 22, 2015, would be labeled MW99-20151022. SoundEarth will note the locations of the field duplicates in the field notes.

10.2 LABORATORY QUALITY CONTROL

Analytical laboratory QA/QC procedures are provided in the *Laboratory Quality Assurance Manual* that is on file at SoundEarth's office for Friedman & Bruya, Inc. and are summarized below:

- **Laboratory Quality Control Criteria.** Results of the QC samples from each sample group will be reviewed by the analyst immediately after a sample group has been analyzed. The QC sample results will then be evaluated to determine whether control limits were exceeded. If control limits are exceeded in the sample group, corrective action (e.g., method modifications followed by reprocessing the affected samples) will be initiated prior to processing a subsequent group of samples. All primary chemical standards and standard solutions used in this project will be traceable to documented and reliable commercial sources. Standards will be validated to determine their accuracy by comparison with an independent standard. Any impurities identified in the standard will be documented.

The following paragraphs summarize the procedures that will be used to assess data quality throughout sample analysis:

- **Laboratory Duplicates.** Analytical duplicates provide information on the precision of the analysis and are useful in assessing potential sample heterogeneity and matrix effects. Analytical duplicates are subsamples of the original sample that are prepared and analyzed as a separate sample. A minimum of 1 duplicate will be analyzed per sample group or for every 20 samples, whichever is more frequent.

- **Matrix Spikes and Matrix Spike Duplicates.** Analysis of matrix spike (MS) samples provides information on the extraction efficiency of the method on the sample matrix. By performing matrix spike duplicate (MSD) analyses, information on the precision of the method is also provided for organic analyses. A minimum of 1 MS/MSD will be analyzed for every sample group or for every 20 samples, whichever is more frequent.
- **Laboratory Control Samples.** A laboratory control sample is a method blank sample carried throughout the same process as the samples to be analyzed, with a known amount of standard added. The blank spike compound recovery assesses analytical accuracy in the absence of any sample heterogeneity or matrix effects.
- **Surrogate Spikes.** All project samples analyzed for organic compounds will be spiked with appropriate surrogate compounds as defined in the analytical methods. Surrogate recoveries will be reported by the laboratories; however, no sample result will be corrected for recovery using these values.
- **Method Blanks.** Method blanks are analyzed to assess possible laboratory contamination at all stages of sample preparation and analysis. A minimum of 1 method blank will be analyzed for every extraction batch or for every 20 samples, whichever is more frequent.

10.3 DATA QUALITY CONTROL

All data generated by Friedman & Bruya, Inc. will undergo two levels of QA/QC evaluation: one by the laboratory and one by SoundEarth. As specified in Friedman & Bruya, Inc.'s *Laboratory Quality Assurance Manual*, the laboratory will perform initial data reduction, evaluation, and reporting. The analytical data will then be validated at SoundEarth under the supervision of the Project QA/QC Officer. The following types of QC information will be reviewed, as appropriate:

- Method deviations
- Sample transport conditions (temperature and integrity)
- Sample extraction and holding times
- Method reporting limits
- Blank samples
- Duplicate samples
- Surrogate recoveries
- Percent completeness
- RPD (precision)

SoundEarth will review field records and results of field observations and measurements to verify procedures were properly performed and documented. The review of field procedures will include the following:

- Completeness and legibility of field logs
- Preparation and frequency of field QC samples
- Equipment calibration and maintenance

- Sample Chain-of-Custody forms

Corrective actions are described in Section 11.0, Corrective Actions.

10.4 DATA ASSESSMENT PROCEDURES

The Project Manager and Project QA/QC Officer are responsible for data review and validation. Upon receipt of each data package from the laboratory, calculations using the equations presented for precision, accuracy, and completeness will be performed. Results will be compared to quantitative DQOs, where established, or qualitative DQOs. Data validation parameters are outlined in Section 8.0, Data Quality Objectives.

10.5 PERFORMANCE AUDITS

Performance audits will be completed for both sampling and analysis work. Field performance will be monitored through regular review of Sample Chain-of-Custody forms, field forms, and field measurements. The Project Manager and/or the Project QA/QC Officer may also perform periodic review of work in progress at the Site.

Accreditations received from Ecology for each analysis by Friedman & Bruya, Inc. demonstrate the laboratory's ability to properly perform the requested methods. Therefore, a system audit of the analytical laboratory during the course of this project will not be conducted.

The Project Manager and/or Project QA/QC Officer will oversee communication with the analytical laboratory on a frequent basis while samples are being processed and analyzed at the laboratory. This will allow SoundEarth to assess progress toward meeting the DQOs and to take corrective measures if problems arise.

The analytical laboratory will be responsible for identifying and correcting, as appropriate, any deviations from performance standards as discussed in Friedman & Bruya, Inc.'s *Laboratory Quality Assurance Manual*. The laboratory will communicate to the Project Manager or the Project QA/QC Officer all deviations to the performance standards and the appropriate corrective measures made during sample analysis. Corrective actions are discussed in Section 11.0.

11.0 CORRECTIVE ACTIONS

Corrective actions will be the joint responsibility of the Project Manager and the Project QA/QC Officer. Corrective procedures can include the following:

- Identifying the source of the violation.
- Reanalyzing samples, if holding time criteria permit.
- Resampling and analyzing.
- Re-measuring parameter.
- Evaluating and amending sampling and analytical procedures.
- Qualifying data to indicate the level of uncertainty.

During field sampling operations, the Project Manager and field staff will be responsible for identifying and correcting protocols that may compromise the quality of the data. All corrective actions taken will be documented in the field notes.

12.0 DOCUMENTATION AND RECORDS

Project files and raw data files will be maintained at SoundEarth’s office. Project records will be stored and maintained in a secure manner. Each project team member is responsible for filing all necessary project information or providing it to the person responsible for the filing system. Individual team members may maintain files for individual tasks, but must provide such files to the central project files upon completion of each task. A project-specific index of file contents will be kept with the project files. Hard copy documents will be kept on file at SoundEarth or at a document storage facility throughout the duration of the project, and all electronic data will be maintained in the database at SoundEarth. All sampling data will be submitted to Ecology in both printed and electronic formats pursuant to WAC 173-340-840(5) and Ecology’s Toxics Cleanup Program Policy 840 (Data Submittal Requirements).

12.1 FIELD DOCUMENTATION

Documentation of field activities will be included on Field Report forms, Boring Log forms, Groundwater Purge and Sample Forms, Sample ID Labels, Waste Material Labels, Waste Inventory Forms, Drum Inventory forms, Material Import and Export Summary Forms, Sample Summary Forms, and Sample Chain-of-Custody forms, examples of which are provided in Attachment A. Field forms will be scanned and saved to an electronic project folder. Original and copied forms will be filed in a binder that will be maintained by the Project Manager.

Field personnel will be required to keep a daily field log on a Field Report form. Field notes will be as descriptive and as inclusive as possible, allowing independent parties to reconstruct the sampling situation from the recorded information. Language will be objective, factual, and free of inappropriate terminology. A summary of each day’s events will be completed on a Field Report form. At a minimum, field documentation will include the date, job number, project identification and location, weather conditions, sample collection data, personnel present and responsibilities, field equipment used, and activities performed in a manner other than specified in the SAP. In addition, if other forms are completed or used (e.g., Sample Chain-of-Custody form), they will be referred to in and attached to the Field Report form. Field personnel will sign the Field Report form.

12.2 ANALYTICAL RECORDS

Analytical data records will be retained by the laboratory and stored electronically in the SoundEarth project file and project database. For all analyses, the data reporting requirements will include those items necessary to complete data validation, including copies of all raw data. The analytical laboratory will be required to report the following, as applicable: project narrative, chain-of-custody records, sample results, QA/QC summaries, calibration data summary, method blank analysis, surrogate spike recovery, matrix spike recovery, matrix duplicate, and laboratory control sample(s).

13.0 HEALTH AND SAFETY PROCEDURES

Field personnel will adhere to health and safety procedures that will be detailed under a separate cover as the Project-Specific HASP. The health and safety and emergency response protocols outlined in the HASP are designed to ensure compliance with state and federal regulations governing worker safety on hazardous waste sites. The Department of Labor has published final rules (Part 1910.120 of Title 29 of the Code of Federal Regulations, March 6, 1990) that amend the existing Occupational Safety and Health Administration standards for hazardous waste operations and emergency response. Within Washington State, these requirements are addressed in WAC 296-843, Hazardous Waste Operations. These regulations apply to the activities to be performed at this Site as a site remediation, or cleanup, under RCRA 1976 and/or MTCA.

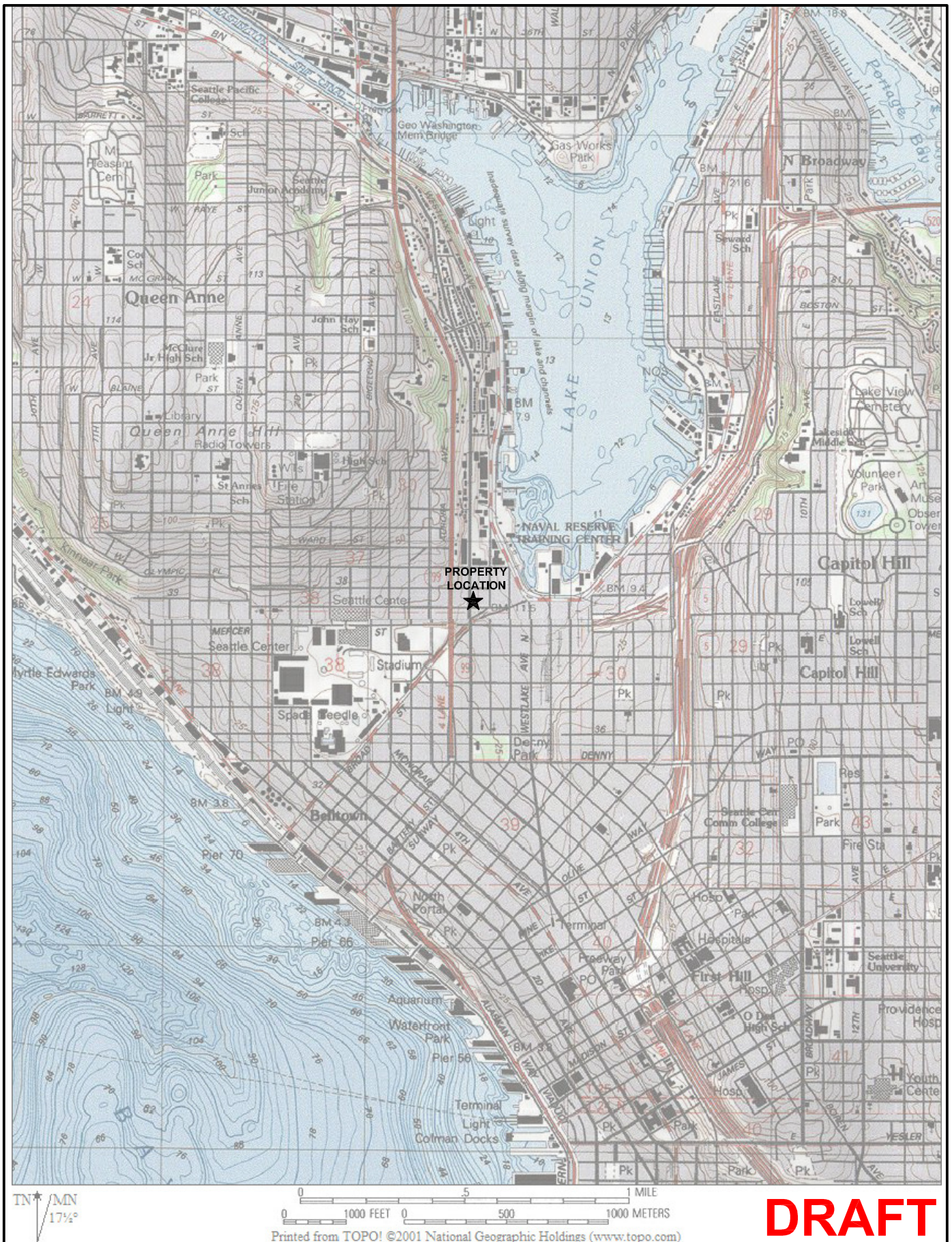
Subcontractors to SoundEarth are required to prepare and effectively implement their own HASP based on their unique scope of work and professional expertise. Each subcontractor's HASP must comply with all applicable federal, state, and local regulations. The subcontractor's HASP should employ appropriate best practices to protect all personnel working on the Site, as well as the public, and to prevent negative impacts to the project or Site.

The responsibilities of SoundEarth for safety on this Site are limited to the following:

- Implementation of the provisions of this HASP for the protection of its employees and visitors on the Site to the extent that the Site and its hazards are under the control of SoundEarth.
- Protection of the Site, other personnel, and the public from damage, injury, or illness as a result of the activities of SoundEarth and its employees while on the Site.
- Provision of additional safety-related advice and/or management as contractually determined between the parties.

It is anticipated that all field work will be performed during the cleanup action in Level D personal protective equipment. Potential hazards that may be encountered during the cleanup action field activities include exposure to contaminants; traffic/mobile equipment; process hazards; unstable ground; noise exposure; overhead and underground utilities; slips, trips, and falls; powered tools and equipment; working around heavy equipment; rolling and/or pinching objects; and exposure to weather conditions.

FIGURES



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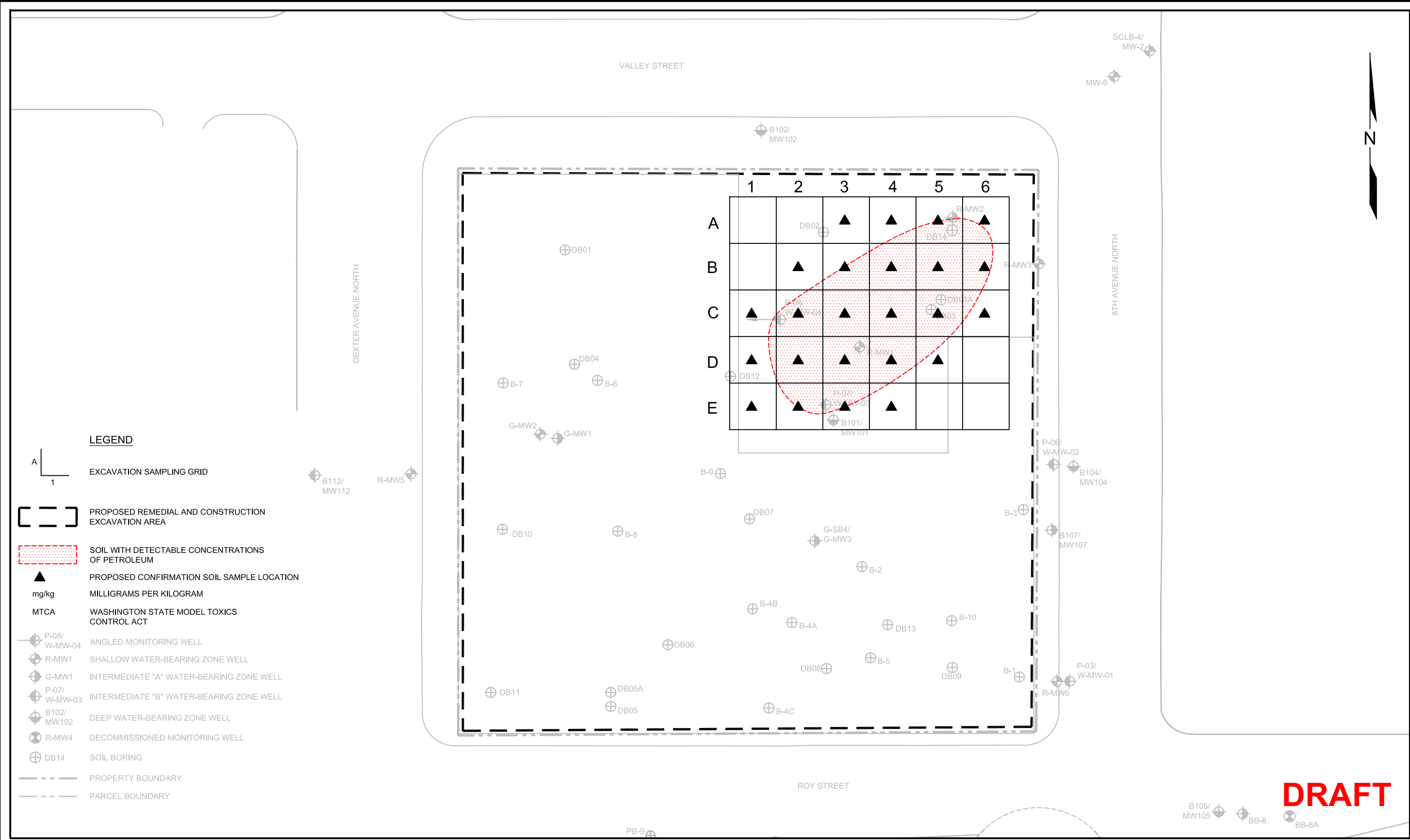


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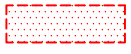












PROJECT NAME: _____ 700 DEXTER PROPERTY
 PROJECT NUMBER: _____ 0797-001
 STREET ADDRESS: _____ 700 DEXTER AVENUE NORTH
 CITY, STATE: _____ SEATTLE, WASHINGTON

FIGURE E-1
 PROPERTY LOCATION MAP

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LEGEND

-  EXCAVATION SAMPLING GRID
-  PROPOSED REMEDIAL AND CONSTRUCTION EXCAVATION AREA
-  SOIL WITH DETECTABLE CONCENTRATIONS OF PETROLEUM
-  PROPOSED CONFIRMATION SOIL SAMPLE LOCATION
-  mg/kg
-  MTCA
-  P-08/
W-MW-04 ANGLED MONITORING WELL
-  R-MW1 SHALLOW WATER-BEARING ZONE WELL
-  G-MW1 INTERMEDIATE "A" WATER-BEARING ZONE WELL
-  P-07/
W-MW-03 INTERMEDIATE "B" WATER-BEARING ZONE WELL
-  B102/
MW102 DEEP WATER-BEARING ZONE WELL
-  R-MW4 DECOMMISSIONED MONITORING WELL
-  DB14 SOIL BORING
-  - - - - - PROPERTY BOUNDARY
-  - - - - - PARCEL BOUNDARY

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DATE: 07/24/13
 DRAWN BY: NAC
 CHECKED BY: SES
 CAD FILE: 0797-001_2013ICAP_SSG

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

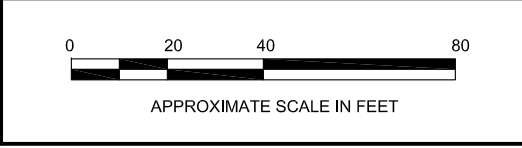
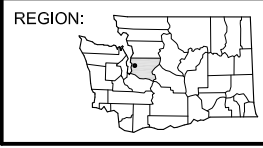


FIGURE E-2
SOIL SAMPLING GRID

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TABLES



**Table E-1
Key Personnel and Responsibilities
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington**

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Project Title	Name	Project Role	Organization	Mailing Address	Email Address	Phone
Regulatory Agency	Eugene Freeman	Regulatory project management. Reviews and approves all submittals to Ecology.	Ecology	3190 160th Avenue Southeast Bellevue, Washington 98008	eufr461@ecy.wa.gov	425-649-7191
Project Contact	Nicole Christ	Project contact.	Frontier Environmental Management, LLC	1821 Blake St., Suite 3C Denver, Colorado 80202	nchrist@frontierem.com	720-746-7720
Project Principal	John F. Funderburk, MSPH	Reviews and oversees all project activities. Reviews all data and deliverables prior to submittal to project contact or Ecology.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington	jfunderburk@soundearthinc.com	206-306-1900
Project Manager	Tom Cammarata	Overall project management, including SAP development, field oversight, document preparation and submittal, and project coordination.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington	tcammarata@soundearthinc.com	206-306-1900
Project QA/QC Officer	Tom Cammarata	Coordinates with laboratory to ensure that SAP requirements are followed and that laboratory quality assurance objectives are met.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington	tcammarata@soundearthinc.com	206-306-1900
Field Coordinator	Courtney Porter	Reports to the project manager. Ensures all project health and safety requirements are followed; coordinates and participates in the field sampling activities; coordinates sample deliveries to laboratory; coordinates sampling activities with site owner subcontractors; reports any deviations from project plans.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington	cporter@soundearthinc.com	206-306-1900
Field Staff	Various licensed geologists and environmental professionals	Reports to field coordinator. Conducts sampling activities.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington		206-306-1900
Data Manager	Jenny Cheng	Ensures that analytical data is incorporated into site database with appropriate qualifiers following validation.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington	jcheng@soundearthinc.com	206-306-1900
Data Validation	Jennifer Cyr	Coordinates with laboratory to ensure that the SAP requirements and laboratory QA/QC objectives are met.	SoundEarth	2811 Fairview Avenue South, Suite 2000 Seattle, Washington	jcyr@soundearthinc.com	206-306-1900
Laboratory Project Manager	Michael Erdahl	Provides analytical support and will be responsible for providing certified, precleaned sample containers and sample preservatives (as appropriate) and for ensuring that all chemical analyses meet the project quality specifications detailed in the SAP.	Friedman & Bruya, Inc.	3012 16th Avenue West Seattle, Washington	merdahl@friedmanandbruya.com	206-285-8282
Private Utility Locator (Subcontractor)	Bravo Environmental	Under the oversight of SoundEarth, clears all boring locations for utilities prior to drilling.	Bravo Environmental	6437 South 144th Street Tukwila, Washington	kgarcia@bravonw.com	425-424-9000
Driller (Subcontractor)	Cascade Drilling, L.P.	Conducts drilling activities using a full-size hollow-stem auger drill rig.	Cascade Drilling, LP	19404 Woodinville-Snohomish Road Woodinville, Washington	jmurnane@cascaeddrilling.com	425-485-8908
Electrical Resistive Heating Contractor	Tom Powell	Coordinates the installation and operation of the electrical resistance heating system.	TRS Group, Inc.	2325 Hudson Street Longview, Washington	tpowell@trthermalrs.com	406-837-0862

NOTES:

Ecology = Washington State Department of Ecology

QA/QC = quality control/quality assurance

SAP = Sampling and Analysis Plan

SoundEarth = SoundEarth Strategies, Inc.



Table E-2
Analytical Methods, Container, Preservation, and Holding Time Requirements
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

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Analyte and Analytical Method	Size and Type of Container	Number of Containers	Preservation Requirements	Holding Time
Soil Samples				
GRPH by Method NWTPH-Gx	40-mL VOA	3	4°C/-7°C at the laboratory	48 hours/2 weeks
BTEX by EPA Method 8021B or 8260B				
CVOCs by EPA Method 8260C	40-mL VOA	3	4°C/-7°C at the laboratory	48 hours/2 weeks
DRPH and ORPH by Method NWTPH-Dx	4-oz glass jar	1	4°C/-7°C at the laboratory	14 days
Water Samples				
GRPH by Method NWTPH-Gx	40-mL VOA vial	3	HCl/4°C	14 days
BTEX by EPA Method 8021B				
CVOCs by EPA Method 8260C	40-mL VOA vial	3	4°C	7 days
DRPH and ORPH by Method NWTPH-Dx	500-mL amber	1	4°C	7 days

NOTES:

°C = degrees Celsius
 BTEX = benzene, toluene, ethylbenzene, and total xylenes
 CVOC = chlorinated volatile compound
 DRPH = diesel-range petroleum hydrocarbons
 EPA = U.S. Environmental Protection Agency
 GRPH = gasoline-range petroleum hydrocarbons

HCl = hydrochloric acid
 mL = milliliter
 NWTPH = Northwest Total Petroleum Hydrocarbon
 ORPH = oil-range petroleum hydrocarbons
 oz = ounce
 VOA = volatile organic analysis



Table E-3
Analytes, Analytical Methods, Laboratory Practical
Quantitation Limits, and Applicable Regulatory Limits
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Analyte	Analytical Method	Unit	Laboratory PQL ⁽¹⁾	Applicable Regulatory Limit ⁽²⁾
Soil				
GRPH	NWTPH-Gx	mg/kg	<2	0.0
Benzene	EPA Method 8021B	mg/kg	<0.02	0.03
Toluene	EPA Method 8021B	mg/kg	<0.02	7
Ethylbenzene	EPA Method 8021B	mg/kg	<0.02	6
Total xylenes	EPA Method 8021B	mg/kg	<0.06	9
DRPH	NWTPH-Dx	mg/kg	<50	2,000
ORPH	NWTPH-Dx	mg/kg	<250	2,000
PCE	EPA Method 8260C	mg/kg	<0.025	0.05
TCE	EPA Method 8260C	mg/kg	<0.03	0.03
Vinyl chloride	EPA Method 8260C	mg/kg	<0.05	0.67
cis-1,2-DCE	EPA Method 8260C	mg/kg	<0.05	160
Water				
GRPH	NWTPH-Gx	µg/L	<100	800/1,000 ⁽³⁾ /100,000 ⁽⁴⁾
Benzene	EPA Method 8021B	µg/L	<1	5/NE
Toluene	EPA Method 8021B	µg/L	<1	1,000/NE
Ethylbenzene	EPA Method 8021B	µg/L	<1	700/NE
Total xylenes	EPA Method 8021B	µg/L	<3	1,000/NE
DRPH	NWTPH-Dx	µg/L	<50	500/100,000 ⁽⁴⁾
ORPH	NWTPH-Dx	µg/L	<250	500/100,000 ⁽⁴⁾
PCE	EPA Method 8021B	µg/L	<1	5/NE
TCE	EPA Method 8260C	µg/L	<1	5/NE
Vinyl chloride	EPA Method 8260C	µg/L	<0.2	0.2/NE
cis-1,2-DCE	EPA Method 8260C	µg/L	<1	16/NE

NOTES:

⁽¹⁾Standard laboratory PQLs for Friedman & Bruya, Inc.

⁽²⁾MTCA Method A or B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

⁽³⁾Cleanup levels for gasoline in soil and groundwater without benzene are 100 mg/kg and 1,000 µg/L, respectively. Cleanup levels for gasoline in soil and groundwater that also contain benzene are 30 mg/kg and 800 µg/L, respectively.

⁽⁴⁾King County Industrial Waste Local Discharge Limit.

µg/L = micrograms per liter

cis-1,2-DCE = cis-1,2-dichloroethylene

DRPH = diesel-range petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

mg/kg = milligrams per kilogram

MTCA = Washington State Model Toxics Control Act

NE = no King County Industrial Waste Local Discharge Limit established

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

PQL = practical quantitation limit

TCE = trichloroethylene



Table E-4
Quantitative Goals of Data Quality Objectives
700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

DRAFT

Analyte	Analytical Method	Precision ⁽¹⁾	Accuracy ⁽²⁾			Completeness ⁽³⁾ (%)	Sensitivity ⁽⁴⁾
		RPD (%)	Surrogate (% Recovery)	MS (% Recovery)	LCS (% Recovery)		PQL ⁽⁵⁾
Soil							
GRPH	NWTPH-Gx	20	50-150	50-150	50-150	95	<2
Benzene	EPA Method 8021B	20	50-150	50-150	50-150	95	<0.02
Toluene	EPA Method 8021B	20	50-150	50-150	50-150	95	<0.02
Ethylbenzene	EPA Method 8021B	20	50-150	50-150	50-150	95	<0.02
Total Xylenes	EPA Method 8021B	20	50-150	50-150	50-150	95	<0.06
DRPH	NWTPH-Dx	20	50-150	50-150	50-150	95	<50
OPRH	NWTPH-Dx	20	50-150	50-150	50-150	95	<250
PCE	EPA Method 8260C	20	36-160	36-160	50-150	95	<0.025
TCE	EPA Method 8260C	20	36-160	36-160	50-150	95	<0.03
Vinyl Chloride	EPA Method 8260C	20	36-160	36-160	50-150	95	<0.05
cis-1,2-DCE	EPA Method 8260C	20	36-160	36-160	50-150	95	<0.05
Water							
GRPH	NWTPH-Gx	20	50-150	50-150	50-150	95	<100
Benzene	EPA Method 8021B	20	50-150	50-150	50-150	95	<1
Toluene	EPA Method 8021B	20	50-150	50-150	50-150	95	<1
Ethylbenzene	EPA Method 8021B	20	50-150	50-150	50-150	95	<1
Total Xylenes	EPA Method 8021B	20	50-150	50-150	50-150	95	<3
DRPH	NWTPH-Dx	20	50-150	50-150	50-150	95	<50
OPRH	NWTPH-Dx	20	50-150	50-150	50-150	95	<250
PCE	EPA Method 8260C	20	36-160	36-160	50-150	95	<1
TCE	EPA Method 8260C	20	36-160	36-160	50-150	95	<1
Vinyl Chloride	EPA Method 8260C	20	36-160	36-160	50-150	95	<0.2
cis-1,2-DCE	EPA Method 8260C	20	36-160	36-160	50-150	95	<1

NOTES:

⁽¹⁾Precision measured in RPD between sample and lab duplicate, LCS and LCS duplicate, and/or MS and MS duplicate.

⁽²⁾Laboratory to follow in accordance with the EPA SW-846 and Ecology methods and procedures for inorganic and organic chemical analyses. Method Blanks will be analyzed for each analyte in addition to the quantitative data quality objectives listed in this table.

⁽³⁾Refers to the minimum acceptable percentages of samples received at the laboratory in good condition that are acceptable for analysis.

⁽⁴⁾Sensitivity is measured by the laboratory PQL for each analyte.

⁽⁵⁾Standard PQLs for Friedman & Bruya, Inc., standard PQLs.

cis-1,2-DCE = cis-1,2-dichloroethylene

DRPH = diesel-range petroleum hydrocarbons

Ecology = Washington State Department of Ecology

EPA = U.S. Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

LCS = laboratory control sample

MS = matrix spike

NWTPH = Northwest Total Petroleum Hydrocarbon Method

OPRH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

PQL = practical quantitation limit

RPD = relative percent difference

TCE = trichloroethylene

ATTACHMENT A
FIELD FORMS



Project:
Project Number:
Logged by:
Date Started:
Surface Conditions:
Well Location N/S:
Well Location E/W:
Reviewed by:
Date Completed:

BORING LOG

Site Address:

Water Depth At Time of Drilling: feet bgs
 Water Depth After Completion: feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppm)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0									
5									
10									
15									

Drilling Co./Driller:
Drilling Equipment:
Sampler Type:
Hammer Type/Weight: lbs
Total Boring Depth: feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: inches
Well Screened Interval: feet bgs
Screen Slot Size: inches
Filter Pack Used:
Surface Seal:
Annular Seal:
Monument Type:

Notes/Comments:



Project:
Project Number:
Logged by:
Date Started:
Surface Conditions:
Well Location N/S:
Well Location E/W:
Reviewed by:
Date Completed:

BORING LOG

Site Address:

Water Depth At Time of Drilling: feet bgs
 Water Depth After Completion: feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppm)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15									
20									
25									
30									

Drilling Co./Driller:
Drilling Equipment:
Sampler Type:
Hammer Type/Weight: lbs
Total Boring Depth: feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: inches
Well Screened Interval: feet bgs
Screen Slot Size: inches
Filter Pack Used:
Surface Seal:
Annular Seal:
Monument Type:

Notes/Comments:

Page:



GROUNDWATER PURGE AND SAMPLE FORM LOW FLOW PUMP

General Info

Client: _____ Project #: _____
Site Name/ #: _____ Field/Sampling Personnel: _____ Well ID Number: _____

Well Details

Total Depth (TD) Feet BTOC	Depth to Water (DTW) (Immediately Prior to Purging) Feet BTOC	Water Column (WC) =TD-DTW Feet BTOC	Casing Diameter					Casing Volume =WC x VC gallons
			Volume Conversion Factor (VC)					
			0.75"	1"	2"	4"	6"	
			0.023	0.041	0.16	0.65	1.44	

Screened Interval: _____ to _____ Feet bgs
Screen Submerged? NO \Rightarrow Place tubing intake 2 to 3 feet below depth to water
 YES \Rightarrow Place tubing intake at approximate center of screen

Equipment

Pump Method: Peristaltic Other: _____ Owner/ID #: _____ Water Quality Meter Brand/Model: _____ Owner/ID #: _____
Water Level Instrument: WL Meter Bubbler Interface Other: _____ Owner/ID #: _____

Sampling

Depth of Tubing Intake: _____ Feet BTOC Time Start Purge: _____

Time (3-5 min intervals)	Water Level (feet) drawdown <0.33 feet	Purge Rate (L/min) 0.1 - 0.5	pH ¹ ± 0.1	Specific Conductivity ¹ UNITS: _____ $\pm 3\%$	Turbidity ¹ (NTU) <i>If ≥ 10, $\pm 10\%$</i> <i>If < 10, stabilized</i>	Dissolved Oxygen ¹ (mg/L) <i>If ≥ 1.00, $\pm 10\%$</i> <i>If ≤ 1.00, ± 0.2</i>	Temperature (°C)	ORP (mV)

Sample Date: _____ Sample Time: _____ Field Duplicate Sample Time: _____ Time Sampling Ended: _____

Sampling Comments: _____

Analytical

Sample Number/ID	Container Type	Preservative	Field Filtered?			Analysis Request
			No	0.45	0.10	
			No	0.45	0.10	
			No	0.45	0.10	
			No	0.45	0.10	
			No	0.45	0.10	
			No	0.45	0.10	

Purge Water

Sheen? NO YES Odor? NO YES \Rightarrow Describe: _____ Color (describe): _____
Total Discharged (1Gal = 3.88 liter): _____ gallons Disposal Method: Drummed Remediation System Other: _____

Well Condition

Well/Security Devices in good condition (i.e.: Monument, Bolts, Seals, J-cap, Lock)? YES NO \Rightarrow Describe: _____
Water in Monument? NO YES \Rightarrow Describe: _____
Additional Well Condition Comments or Explanation of any Access Issues: _____

¹At minimum, pH, specific conductivity, and dissolved oxygen and/or turbidity must stabilize within the limits (indicated in *italics*) for three successive readings prior to sampling.

FRIEDMAN & BRUYA, INC.	
Client:	
Sample ID:	
Date Sampled:	Time:
Project:	
Analysis Request:	
Preservative:	

SAMPLE CHAIN OF CUSTODY

Send Report to _____
 Company SoundEarth Strategies, Inc.
 Address 2811 Fairview Avenue E, Suite 2000
 City, State, ZIP Seattle, WA 98102
 Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS <i>(signature)</i>	
PROJECT NAME/NO.	PO #
REMARKS	

Page # _____ of _____
TURNAROUND TIME Standard (2 Weeks) RUSH _____ Rush charges authorized by: _____
SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED						Notes	
								DRPH & ORPH by NWTPH-Dx	GRPH by NWTPH-Gx	VOCs by EPA 8260C	RCRA 8 Metals by EPA 200.8 & 1631E				

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				



DRUM INVENTORY SHEET

Site Name: _____
 Site Address: _____
 Reason for Site Visit: _____
 Date of Inventory: _____
 Field Personnel: _____

Drum # ¹ (eg. 001)	Content Information	Date(s) Accumulated	Fullness (%)	Sample Analysis Performed?	Composite Soil Sample (RCRA 8 metals) ² (Y/N)	Saturated Soil ³ (Y/N)	Drum Labeled (Y/N)	Drum Location Photo (Y/N)	Drum Access ⁴
Eg. 001	Soil, B05, 5'-15'	2/3/10	100%	Gx, BTEX	Y	N	Y	Y	Combo lock #xxxx
Eg. 002	Purge Water	2/3/10	100%	Gx, BTEX	N/A	N/A	Y	Y	Combo lock #xxxx

NOTES:

¹Drum #— Write the Drum # on the drum lid, as well as on the non-hazardous or hazardous waste labels.

²Composite Soil Sample—For all sites, collect one composite soil sample from each drum onsite. Place sample on hold at the laboratory, for future RCRA 8 metals analysis. Collect sample in one-4 ounce jar.

³Saturated soil—Add bentonite chips or kitty litter to the water that has accumulated or may accumulate inside the drum. Bentonite chips available in the garage.

⁴Drum access for pickup—(eg. fenced, owner notification, lock combination?)

HAZARDOUS WASTE

ACCUMULATION
START DATE _____

CONTENTS _____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

**NON-
HAZARDOUS**

WASTE

GENERATOR INFORMATION (Optional)

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

**NON-
HAZARDOUS**

APPENDIX F
PROJECT-SPECIFIC HEALTH AND SAFETY PLAN

PROJECT-SPECIFIC HEALTH AND SAFETY PLAN

Appendix F of the Cleanup Action Plan



Property:

700 Dexter Property
700 Dexter Avenue North
Seattle, Washington

Prepared for:

Frontier Environmental Management, LLC
1821 Blake Street, Suite 3C
Denver, Colorado

Report Date:

September 28, 2015

DRAFT – ISSUED FOR REGULATORY REVIEW

Project-Specific Health and Safety Plan

Prepared for:

Frontier Environmental Management, LLC
1821 Blake Street, Suite 3C
Denver, Colorado 80202

700 Dexter Property
700 Dexter Avenue North
Seattle, Washington 98109

Project No.: 0797-001

Prepared by:

DRAFT

Charles C. Cacek, LEG #836
Associate Geologist

Reviewed by:

DRAFT

John R. Funderburk, MSPH
Principal

Initiation Date: September 28, 2015
Expiration Date: September 28, 2016



HAZARD SUMMARY

SoundEarth Strategies, Inc. (SoundEarth) has prepared this Project-specific Health and Safety Plan (HASP) for the 700 Dexter Property, located at 700 Dexter Avenue North in Seattle, Washington (the Property). The Project-specific HASP was written in general accordance with the Washington State Model Toxics Control Act (MTCA) as promulgated in Chapter 173-340-350 of the Washington Administrative Code.

PROPERTY DESCRIPTION

The Property consists of the entire block formed by the intersection of Dexter Avenue North, Valley Street, 8th Avenue North, and Roy Street. A commercial laundry facility operated on the Property between 1925 and the 1980s. Dry cleaning activities reportedly occurred on the Property from the mid-1960s through the 1980s. Four 6,000-gallon underground storage tanks (USTs), formerly used for the storage of fuel oil, were also present on the Property. The use of these tanks was discontinued in the 1980s.

A commercial gasoline service station operated on the northwest portion of the Property between 1931 and 1966. The facility was removed in order to construct the current 1966-vintage commercial laundry building. Construction of this building included a 20-foot-deep excavation for a basement. A second gasoline fueling facility was constructed on the northeast corner of the Property in 1946. This facility was used for refueling delivery trucks for the American Linen Supply Company. The USTs for this facility were removed in 1990.

Numerous environmental investigations were conducted at the Property between 1992 and 2013. The investigations confirmed releases of chlorinated solvents and petroleum hydrocarbons to soil and groundwater at concentrations exceeding Washington State MTCA cleanup levels. Tetrachloroethylene concentrations indicative of dense nonaqueous-phase liquid have been observed in groundwater beneath the Property.

FIELD ACTIVITIES

The following field activities are covered under this Project-Specific HASP:

- Drilling
- Subsurface soil and groundwater sampling
- Pressurized Injections
- Groundwater sampling and monitoring

PROJECT HAZARDS

Hazards present for the project include the following:

Chemical

- Tetrachloroethylene (PCE)
- Trichloroethylene (TCE)

HAZARD SUMMARY (CONTINUED)

- Cis-1,2-dichloroethylene (cis-1,2-DCE)
- Trans-1,2-dichloroethylene
- Vinyl chloride
- Diesel-range petroleum hydrocarbons (DRPH)
- Gasoline-range petroleum hydrocarbons (GRPH)
- Oil-range petroleum hydrocarbons (ORPH)
- Benzene
- Toluene
- Ethylbenzene
- Xylenes

Physical

- Electrical hazards
- Ergonomic hazards
- Flammable liquids
- Heavy equipment/moving machinery
- Overhead utilities and features
- Pressurized injectate
- Temperature extremes
- Chemical exposure
- Traffic and moving equipment
- Noise Exposure
- Slips/trips/falls/cuts
- Unsecure/uncontrolled site
- Underground utilities and features
- Unstable ground
- Potential flammable/explosive equipment

HAZARD CONTROLS

The following existing controls are present at the site:

- The site is capped by asphalt and concrete, preventing direct contact with contaminated soil and/or groundwater.

HAZARD SUMMARY (CONTINUED)

The following additional hazard controls, based on the tasks identified in the Field Activities above, are required for employees of SoundEarth while performing work on the Property:

- Level D personal protective equipment (PPE), which includes hard hats, steel-toed boots, safety glasses, and a reflective safety vest
- Nitrile gloves
- Traffic control devices in compliance with traffic control plans required for individual borings; delineators and/or traffic cones around drill rig
- Hearing protection
- Traffic control
- Caution tape
- Metal plates
- Splash shield during injections

Required Air Monitoring During Subsurface Investigations

- Vinyl chloride colorimetric gas detection tubes in areas known to contain TCE and its degradation products.
- Breathing space monitoring with photoionization detector (PID).

This hazard summary is presented solely for introductory purposes, and the information contained in this section should be used only in conjunction with the full text of this report. A complete description of the project, Property conditions, investigation methods, and investigation results can be found in previous reports referenced in Section 4.1.1, Reports that Provide Chemical Data.

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ATTACHMENTS

A Acknowledgment and Agreement Form

B Daily Health and Safety Briefing Log

C Hospital Route(s)

1.0 INTRODUCTION

This Project-Specific Health and Safety Plan (HASP) was written for the use of SoundEarth Strategies, Inc. (SoundEarth) and its employees. The health and safety and emergency response protocols outlined in this plan are designed to ensure compliance with state and federal regulations governing worker safety on hazardous waste sites. The Department of Labor has published final rules (Part 1910.120 of Title 29 of the Code of Federal Regulations, March 6, 1990) that amend the existing part per million (ppm).

Occupational Safety and Health Administration (OSHA) standards for hazardous waste operations and emergency response. Within the state of Washington, these requirements are addressed in Chapter 296-843 of the Washington Administrative Code, Hazardous Waste Operations. These regulations apply to the activities to be performed at this Property as a remediation, or cleanup, under the Federal Resource Conservation and Recovery Act of 1976 and/or the Washington State Model Toxics Control Act (MTCA).

Subcontractors to SoundEarth are required to prepare and effectively implement their own HASP based on their unique scope of work and professional expertise. Each subcontractor's HASP must comply with all applicable federal, state, and local regulations. The subcontractor's HASP should employ appropriate best practices to protect all personnel working on the Property, as well as the public, and to prevent negative impacts to the project.

The responsibilities of SoundEarth for safety on this Property are limited to:

- **Implementation** of the provisions of this HASP for the protection of its employees and visitors on the Property to the extent that the Property and its hazards are under the control of SoundEarth.
- **Protection of the Property**, other personnel, and the public from damage, injury, or illness as a result of the activities of SoundEarth and its employees while on the Property.
- **Provision** of additional safety-related advice and/or management as contractually determined between the parties.

This plan is active for this Property until 1 year from the date of the HASP or until SoundEarth implements a scope of work change not covered by this HASP, whichever comes first, after which time it must be reviewed and extended.

NOTE: Reference identifications (08-01, Project Responsibilities through 08-23, Work Near Water) incorporated into this Project-specific HASP refer to the *HASP Reference Manual*, prepared by SoundEarth and dated January 2011, which is a stand-alone document that compiles detailed information and instructions for protecting SoundEarth employees from chemical and physical hazards applicable to this Project-specific HASP. The *HASP Reference Manual* and this Project-specific HASP **MUST** be present at the Site during field activities.

2.0 PROPERTY INFORMATION

Name: 700 Dexter Property
Address: 700 Dexter Avenue North, Seattle, Washington
Owner: 700 Dexter, LLC
Tenant: None
Nature of Activities at this Property: Vacant

3.0 PROJECT ROLES AND EMERGENCY INFORMATION

On-site personnel shall acknowledge that they have reviewed a copy of the HASP for this project, that they understand it, and that they agree to comply with all of its provisions by signing and dating the Acknowledgment and Agreement Form in Attachment A.

A daily health and safety tailgate meeting shall take place at the start of every day in the field. All on-site personnel are to attend this meeting and print and sign their name on the attached Daily Health and Safety Briefing Log in Attachment B. Reference 01, Project Safety Responsibilities, provides more information.

Project Emergency Numbers		
Title	Name	Phone Number
Project Manager	Tom Cammarata	O: 206-436-5940 C: 206-261-8046
Site Manager/Health and Safety Officer	Courtney Porter	O: 206-245-1186 C: 425-213-3300
Principal-in-Charge	John Funderburk	O: 206-436-5933 C: 425-922-9922
Corporate Health and Safety Representative	John Murnane	O: 206-436-5928 C: 425-877-8686
Certified Industrial Hygienist working for SoundEarth	Michelle Copeland	O: 206-729-5018 C: 206-612-6355

On-site personnel are responsible for initiating emergency response actions, as necessary, and reporting any potentially hazardous conditions they encounter to the Corporate Health and Safety Administrator and initiating site evacuation procedures. **For a critical emergency, any SoundEarth employee should call 911.** Reference 02, Emergency Response Plan, provides more information. Institute First Aid measures, including CPR (cardiopulmonary resuscitation), as appropriate.

Note: A SoundEarth employee MAY NOT transport a non-SoundEarth employee off of the Property for medical attention.

The following list of emergency phone numbers and the location and driving directions to the nearby hospital must be posted at the site (Attachment C, Hospital Route).

Local Emergency Numbers		
Institution/Department	Name/Address	Phone Number
Hospital	Virginia Mason 1100 9 th Avenue Seattle, Washington	911 or 206-223-6600
Ambulance		911
Police/Sheriff	Seattle Police Department 610 5 th Avenue Seattle, Washington	911
Fire	Seattle Fire Department 301 2 nd Avenue South Seattle, Washington	911

Attachment C, Hospital Route, provides the location and driving directions. The route must be posted at the Site.

4.0 GENERAL PROJECT HAZARD ANALYSIS

This section is used to determine the project’s potential health and safety hazards specifically as they relate to the Property where the work will occur. Task-related hazards are analyzed in Section 6.0, Task-Related Site Hazard Control Summary.

4.1 GENERAL PROJECT HAZARD ANALYSIS—CHEMICAL

This section describes and identifies potential and known chemical hazards that may be encountered at the Property (summarized in Table 1). Reference 08-03, Chemical Hazards Analysis, provides more information.

4.1.1 Reports that Provide Chemical Data

- SoundEarth Strategies, Inc. *Remedial Investigation Report, 700 Dexter Property, 700 Dexter Avenue North, Seattle, Washington*. 2013-In review.
- SoundEarth Strategies, Inc. *Feasibility Study Report, 700 Dexter Property, 700 Dexter Avenue North, Seattle, Washington*. 2013-In review.

4.1.2 Summary of Potential Chemical Hazards

- PCE, TCE, cis- and trans-1,2 DCE, and vinyl chloride in soil and groundwater.
- GRPH, DRPH, ORPH and benzene, toluene, ethylbenzene, and total xylenes in soil and groundwater.

4.1.3 Past Opportunities for Chemical Contamination

The Property formerly contained a dry-cleaning facility from approximately the mid-1960s through the mid-1980s. Four medium-sized, 6,000-gallon USTs that contained fuel oil also existed within the 1947 building. The use of these USTs was discontinued in the 1980s when the facility was renovated for the use of natural gas to operate the boilers.

An early-era commercial gasoline service station was operated on the northwest corner of the Property from 1931 until 1966, when the present commercial laundry building was constructed with a basement floor that required a 20-foot-deep excavation. A second gasoline fueling operation was constructed in 1946 in the northeast corner of the Property. The USTs for this area were removed in 1990.

Environmental investigations conducted at the Property from 1992 to 2013 confirmed releases of chlorinated solvents and petroleum hydrocarbons to soil and groundwater from the historical dry cleaning and fueling operations, and contaminant concentrations in soil and groundwater in excess of applicable cleanup criteria established under MTCA.

4.1.4 Opportunities for Unknown or Unidentified Chemical Contamination

None identified in previous investigations.

4.1.5 Chemical Analytical Results

For the applicable media, refer to the document/report that contains the table with analytical data. Identified chemicals are included in Table 1 below.

- Summary of Soil Analytical Results (Table 1 of the 2015 Draft Cleanup Action Plan)
- Summary of Groundwater Analytical Results (Table 2 of the 2015 Draft Cleanup Action Plan)

TABLE 1 - CHEMICAL HAZARDS

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
1,2-DCE (1,2- Dichloroethylene)	DOSH PEL: 200 ppm TWA 250 ppm STEL	NIOSH REL: 200 ppm TWA IDLH: 1,000 ppm FP: 36–39°F LEL: 5.6%	Inhalation, ingestion, skin or eye contact Slightly acidic, chloroform-like odor	Eye and respiratory system irritation, central nervous system depression	Eyes, respiratory system, central nervous system	<ul style="list-style-type: none"> ■ Impermeable, chemical-resistant, disposable clothing ■ Silver Shield/ composite glove <hr/> If PEL is exceeded, min SA continuous flow or PAPR OV cartridge	If potential for exposure exists: <ul style="list-style-type: none"> ■ Initial personal air sampling ■ Additional sampling if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment Real Time: <ul style="list-style-type: none"> ■ 10.2 or 10.6 eV PID

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
Benzene (component of gasoline)	DOSH PEL: 1 ppm TWA 5 ppm STEL DOSH AL: 0.5 ppm TWA	NIOSH REL: 0.1 ppm TWA 1 ppm STEL IDLH: 500 ppm FP: 12 °F LEL: 1.2% Carcinogen	Inhalation, ingestion, skin absorption, eye contact Aromatic odor	Irritation of eyes, skin, nose, respiratory system; dizziness; headache; nausea (Carcinogen)	Eyes, skin, respiratory system, blood, central nervous system, bone marrow	<ul style="list-style-type: none"> ■ Impermeable, disposable clothing ■ Nitrile or Neoprene gloves ■ Min ½ Mask AP/HEPA <hr/> <p>If PEL is exceeded, min full-face SA respirator in positive pressure/ pressure demand mode.</p> <ul style="list-style-type: none"> ■ Higher APF if per air monitoring 	<p>If potential for exposure exists:</p> <ul style="list-style-type: none"> ■ Initial personal air sampling ■ Additional sampling if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment <p>Real Time:</p> <ul style="list-style-type: none"> ■ Detector Tube ■ 10.2 or 10.6 eV PID

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
DRPH (As Diesel Fuel #2 and petroleum distillates)	DOSH PEL: 100 ppm TWA 150 ppm STEL OSHA PEL: 500 ppm TWA	NIOSH REL: 86 ppm TWA 444 ppm STEL ACGIH TLV: 100 mg/m ³ TWA IDLH: 1,100 ppm FP: -40 to -86 °F LEL: 1.1% <u>Carcinogen</u> Combustible liquid	Inhalation, ingestion, skin or eye contact <u>Gasoline or kerosene-like odor</u> Floats on water Clear, yellow- brown liquid	Irritation of eyes, nose, throat; dizziness; drowsiness; headache; nausea; dry cracked skin; inflammation of lungs; dermatitis; skin reddening	Eyes, skin, respiratory system, central nervous system, kidneys <u>Breathing:</u> Respiratory support	<ul style="list-style-type: none"> ■ Impermeable, chemical-resistant, disposable clothing ■ Nitrile or neoprene gloves <u>If PEL is exceeded: any SA respirator</u>	<p>If potential for exposure exists:</p> <ul style="list-style-type: none"> ■ Initiate personal air monitoring; additional monitoring if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment <p>Real Time Monitoring Equipment: 10.2 or 10.6 eV PID</p>

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
Ethylbenzene	DOSH PEL: 100 ppm TWA 125 ppm STEL	NIOSH REL: 100 ppm TWA 125 ppm STEL IDLH: 800 ppm FP: 55° F Flammable liquid	Inhalation, ingestion, skin or eye contact Sweet, floral odor	Irritation of eyes, skin, nose, mucous membrane; dizziness; headache; drowsiness; unsteady gait; defatting; inflammation of skin; possible liver injury; reproductive effects	Eyes, skin, central nervous system, liver, respiratory system, reproductive system Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory support Ingestion: Medical attention immediately	<ul style="list-style-type: none"> ■ Impermeable, chemical resistant disposable clothing ■ Silver Shield/composite gloves If PEL is exceeded: min ½ Mask AP with OV cartridge	If potential for exposure exists: <ul style="list-style-type: none"> ■ Initiate personal air monitoring; additional monitoring if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: <ul style="list-style-type: none"> ■ Detector tubes 10.2 or 10.6 eV PID

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
GRPH (motor fuel, motor spirits, gasoline, TPH)	DOSH PEL: 300 ppm TWA 500 ppm STEL	ACGIH TLV: 300 ppm TWA 500 ppm STEL FP: -45 °F LEL: 1.4% Carcinogen	Inhalation, ingestion, skin absorption, skin or eye contact Characteristic odor Rainbow sheen	Irritation of eyes, skin, and mucous membranes; inflammation of skin and lungs; headache; weakness; exhaustion; blurred vision; dizziness, slurred speech; confusion; convulsions; possible liver and kidney damage; (potential occupational carcinogen)	Eyes, skin, respiratory system, central nervous system, liver, kidneys Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately	<ul style="list-style-type: none"> ■ Impermeable, chemical-resistant, disposable clothing ■ Nitrile gloves If PEL is exceeded: min full-face SA respirator in PP/PD mode	If potential for exposure exists: <ul style="list-style-type: none"> ■ Initiate personal air monitoring; additional monitoring if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: <ul style="list-style-type: none"> ■ Detector Tubes 10.2 or 10.6 eV PID

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
Tetra- chloroethylene (PCE)	DOSH PEL 25 ppm TWA 38 ppm STEL Skin OSHA PEL 100 ppm TWA	IDLH: 150 ppm Carcinogen	Inhalation, ingestion, skin absorption, skin or eye contact Mild, chloroform-like odor	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, central nervous system	<ul style="list-style-type: none"> ■ Impermeable, chemical resistant disposable clothing ■ Nitrile <hr/> <ul style="list-style-type: none"> ■ If PEL is exceeded, any SA respirator in positive pressure/ pressure demand mode 	<p>If potential for exposure exists:</p> <ul style="list-style-type: none"> ■ Initial personal air sampling ■ Additional sampling if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment <p>Real Time: 10.2 or 10.6 eV PID</p>
Toluene	DOSH PEL: 100 ppm TWA 150 ppm STEL OSHA PEL: 200 ppm TWA 300 ppm C 500 ppm (10- minute maximum peak)	NIOSH REL: 100 ppm TWA 150 ppm STEL IDLH: 500 ppm FP: 40 °F LEL: 1.1% None	Inhalation, ingestion, skin absorption, skin or eye contact Sweet, pungent benzene-like odor	Irritation of eyes and nose, weakness, exhaustion, confusion, euphoria, dizziness, headache, dilated pupils, tear discharge, anxiety, muscle fatigue, insomnia, tingling, prickling, and inflammation of skin, liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately	<ul style="list-style-type: none"> ■ Impermeable, chemical- resistant, disposable clothing ■ Nitrile or Silver Shield gloves (for more extensive contact) <hr/> <p>If PEL is exceeded: min ½ Mask AP with OV cartridge</p>	<p>If potential for exposure exists:</p> <ul style="list-style-type: none"> ■ Initiate personal air monitoring; additional monitoring if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment <p>Real Time Monitoring Equipment: 9.8 eV PID</p>

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
Trichloroethylene	DOSH PEL: 50 ppm TWA 200 ppm STEL OSHA PEL: 100 ppm TWA 200 ppm C 300 ppm (5k- minute maximum peak in any 2 hours)	NIOSH REL: 25 ppm TWA (10- hour) IDLH: 1,000 ppm LEL: 8% Carcinogen	Inhalation, skin absorption, ingestion, skin or eye contact Chloroform-like odor	Irritation of eyes and skin; headache; visual disturbance; weakness; exhaustion; dizziness; tremor; drowsiness; nausea; vomiting; tingling, pricking, and inflammation of skin; cardiac arrhythmias; liver injury (potential occupational carcinogen)	Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system	<ul style="list-style-type: none"> ■ Impermeable, chemical resistant disposable clothing ■ Nitrile gloves <hr/> If PEL is exceeded, min full-face SA respirator in positive pressure/pressure demand mode	If potential for exposure exists: <ul style="list-style-type: none"> ■ Initial personal air sampling ■ Additional sampling if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment Real Time: <ul style="list-style-type: none"> ■ 10.2 or 10.6 eV PID

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
Vinyl Chloride	DOSH PEL 1 ppm TWA 5 ppm STEL OSHA PEL 1 ppm TWA 5 ppm C (15 minute)	FP: N/A (gas) LEL: 3.6% Carcinogen	Inhalation, ingestion, skin or eye contact Pleasant odor at high concentrations	Lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Liver, central nervous system, blood, respiratory system, lymphatic system	<ul style="list-style-type: none"> ■ Impermeable, chemical resistant disposable clothing ■ Silver Shield / composite gloves <hr/> <ul style="list-style-type: none"> ■ If PEL is exceeded, any SA respirator in positive pressure/ pressure demand mode 	<p>If potential for exposure exists:</p> <ul style="list-style-type: none"> ■ Initial personal air sampling ■ Additional sampling if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment <p>Real Time:</p> <ul style="list-style-type: none"> ■ 10.2 or 10.6 eV PID

Chemical (or Class)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits	Routes of Exposure	Exposure Symptoms	Target Organs	Recommended PPE	Recommended Monitoring/ Sampling Method
			Warning Properties			Respiratory Protection	
Xylenes (Isomers m-, o-, and p-)	DOSH PEL: 100 ppm TWA 150 ppm STEL	NIOSH REL: 100 ppm TWA 150 ppm STEL IDLH: 900 ppm FP: 81-90 °F LEL: 0.9-1.1% None	Inhalation, ingestion, skin absorption, skin or eye contact Aromatic odor	Irritation of eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal cell debris; anorexia, nausea, vomiting, abdominal pain; inflammation of skin	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys Eye: Irrigate immediately Skin: Soap wash immediately Inhalation: Respiratory support Ingestion: Medical attention immediately	<ul style="list-style-type: none"> ■ Impermeable, chemical-resistant, disposable clothing ■ Nitrile gloves If PEL is exceeded: min ½ Mask AP with OV cartridge	If potential for exposure exists: <ul style="list-style-type: none"> ■ Initiate personal air monitoring; additional monitoring if necessary based on initial results ■ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: 10.2 or 10.6 eV PID

NOTES:

The NIOSH Pocket Guide provides more information for the chemical in question or for a chemical not listed.

ACGIH = American Conference of Governmental Industrial Hygienists

AL = action limit

AP = air purifying respirator

APF = assigned protection factor

C = ceiling exposure limit

DOSH = Washington State Department of Labor and Industries, Division of Occupational Safety and Health (formerly the Washington Industrial Safety and Health Act)

eV = electron volt

°F = degrees Fahrenheit

FP = flash point

HEPA = high efficiency particulate air cartridge

IDLH = immediately dangerous to life and health

LEL = lower explosive limit

mg/m³ = milligrams per cubic meter

min = minimum

N/A = not applicable

NIOSH = National Institute of Safety and Health

OSHA = Occupational Safety and Health Administration

OV = organic vapor cartridge

PAPR = powered air purifying respirator

PEL = permissible exposure limit

PID = photoionization detector

PPE = personal protective equipment

ppm = parts per million

PP/PD = positive pressure/pressure demand mode

REL = recommended exposure limit

SA = supplied air respirator

STEL = short-term exposure limit, 15 minutes, unless otherwise noted

TLV = threshold limit value

TPH = total petroleum hydrocarbon

TWA = time-weighted average

4.1.6 Protection Against Chemical Hazards

4.1.6.1 PPE

The minimum PPE on any SoundEarth worksite includes safety vest, safety glasses, steel-toed work shoes or boots, hearing protection around noisy operations, and hard hat where there is an overhead hazard. Unless otherwise specified, nitrile or neoprene gloves should be worn when collecting samples.

All PPE must be properly fitted to each employee who will use it. It must be kept clean, sanitary, and properly maintained. Cleaning is particularly important for eye and face protection, because dirty or fogged lenses could impair vision. Personnel must inspect, clean, and maintain PPE according to the manufacturers' instructions before and after each use. The Site Manager/Health and Safety Officer can answer any questions about the appropriate PPE for the project or the correct care of it.

In addition to minimum level D PPE, workers in direct contact with potentially impacted soil and groundwater will wear double nitrile gloves. Outer gloves will be replaced after each contact, and both inner and outer gloves will be replaced after no longer than 1 hour. Alternatively, Viton gloves may be used.

4.1.6.2 Air Monitoring

Air monitoring will be performed with a PID equipped with a 10.8 eV lamp on a continuous basis, with recording capability and alarm at pre-determined set point of 5 ppm or periodically (usually between 15 minutes and 1 hour, depending on the location) with manually recorded data. If exceedances of 5 ppm occur, monitoring frequency will be reduced to 5 minutes. If the subsequent reading in excess of 5 ppm occurs, workers will utilize half-face or full face respirators with volatile organic compound cartridges until reading drop below 5 ppm.

If elevated vapors are deemed present by PID monitoring, vinyl chloride colorimetric gas detection tubes will be utilized on a daily basis during the greatest risk of exposure.

4.1.6.3 Investigation-Derived Waste Monitoring and Spill Response

Investigation-derived waste, including soil and groundwater, will be stored in 55-gallon drums or other appropriate containment devices.

In the event that a release occurs from the drum storage a satellite accumulation area, spilled media would be swept up or contained with sorbent booms which will be stored on the Property in case of such an event. As with other site work, potential exposure will be monitored by way of PID screening, and appropriate PPE will be utilized accordingly.

4.2 GENERAL SITE HAZARD ANALYSIS—PHYSICAL

This section addresses known and potential physical hazards specific to the Property. Reference 08-04, Physical Hazards Analysis, provides more information. Worksite documents provided by the client/owner/tenant can be helpful to identify Project specific physical hazards (non-SoundEarth HASPs, Traffic Control Plans, Operation and Maintenance Plans, and others documents).

4.2.1 General Project-Specific Physical Hazards

Described below are physical hazards that may be encountered while on the Site:

- Electrical hazards
- Ergonomic hazards
- Flammable liquids
- Heavy equipment/moving machinery
- Overhead utilities and features
- Pressurized injectate
- Temperature extremes
- Chemical exposure
- Traffic and moving equipment
- Noise Exposure
- Slips/trips/falls/cuts
- Unsecure/uncontrolled site
- Underground utilities and features
- Unstable ground
- Potential flammable/explosive equipment

4.2.2 Utility Hazards

Described below are utility hazards that are present at the Site. The Utilities Underground Location Center was called at 800-424-5555, private locates have been completed for all boring locations, side sewer cards should be reviewed, owner/tenant documents should be reviewed, and the Site should be visually inspected.

4.2.2.1 Underground Utilities (Reference 08-19, Underground Services Location and Protection)

- Cable, natural gas, water, phone, and sanitary sewer

4.2.2.2 Overhead Utilities (Reference 08-10, Electrical Safety)

- Overhead power: observed lines and identified with One-Call Location Service and private locate

Overhead power located along the east side of 8th Avenue North is 26 kilovolt service. The drilling contractor indicated they will maintain a working distance of 15 feet from the lines. At no point during setup or operation will the drilling mast be closer than 15 feet to the lines.

5.0 TASK-RELATED SITE HAZARD ANALYSIS

This section outlines the health and safety hazards that may be present on the Property as a result of the tasks to be performed by SoundEarth or subcontractors as they relate to the chemical, and physical identified in Sections 4.1 and 4.2 above. References noted in Table 2 for the controls and any PPE required should be reviewed. Reference identifications (08-01, Project Responsibilities through 08-23,

Work Near Water) incorporated into Table 2 refer to the *HASP Reference Manual*, dated January 2011, which is a stand-alone document that compiles detailed information and instructions for protecting SoundEarth employees from chemical and physical hazards applicable to this Project-specific HASP. A summary of the controls specific to the Site is presented in Section 6.0, Task-Related Site Hazard Controls Summary.

TABLE 2 - PROJECT-SPECIFIC TASK-RELATED HAZARDS

Tasks	Role	Hazard	References
Sampling – Environmental	Task performed by SoundEarth	Chemicals	Table 1, Chemical Hazards; 08-06, Chemical Hazard Controls; 08-17, Sample Collection
		Confined spaces	08-09, Confined Space Awareness
		Emergency response	08-02, Emergency Response Plan
		Ergonomics	08-11, Ergonomics
		General site hazards	08-07, General Site Safety Requirements
		Heat stress/hypothermia	08-13, Temperature Extremes
		Ladders or heights	08-22, Work at Heights
		Processes	08-21, Work Around Hazardous Processes
		Spills	08-06, Chemical Hazard Controls; 08-24, Safe Handling of Flammable Liquids
		Traffic/mobile equipment	08-18, Traffic and Moving Equipment Hazards
		Unstable ground	08-20, Unstable Ground
		Visibility	08-07, General Site Safety Requirements; 08-18, Traffic and Moving Equipment Hazards
Water hazards	08-23, Work Near Water		

Tasks	Role	Hazard	References
Drilling and Subsurface Investigation	Subcontractor Observation	Chemicals	Table 1, Chemical Hazards; 08-06, Site-Specific Chemical Hazard Controls; 08-17, Sample Collection
		Emergency response	08-02, Emergency Response Plan
		Ergonomics	08-11, Ergonomics
		General site hazards	08-07, General Site Safety Requirements
		Heat stress/hypothermia	08-13, Temperature Extremes
		Noise	08-15, Noise and Hearing Protection
		Overhead electric utilities	08-10, Electrical Safety
		Powered tools and equipment	08-10, Electrical Safety;
		Traffic/mobile equipment	08-18, Traffic and Moving Equipment Hazards
		Unsecure/uncontrolled Site	08-08, Site Security and Overall Site Control
		Underground utilities and features	08-19, Underground Services Location and Protection; 08-10, Electrical Safety
		Unstable ground	08-20, Unstable Ground
Excavation and Trenching	Subcontractor Observation	Chemicals	Table 1, Chemical Hazards; 08-06, Chemical Hazard Controls; 08-17, Sample Collection
		Confined spaces	08-09, Confined Space Awareness
		Cutting/welding	08-10, Electrical Safety; 08-14, Hot Work Awareness
		Emergency response	08-02, Emergency Response Plan

Tasks	Role	Hazard	References
Excavation and Trenching (continued)	Subcontractor Observation	Ergonomics	08-11, Ergonomics
		General site hazards	08-07, General Site Safety Requirements
		Heat stress/hypothermia	08-13, Temperature Extremes
		Noise	08-15, Noise and Hearing Protection
		Overhead utilities and features	08-10, Electrical Safety; 08-16, Overhead Hazards
		Powered tools and equipment	08-10, Electrical Safety
		Traffic/mobile equipment	08-18, Traffic and Moving Equipment Hazards
		Unsecure/uncontrolled Site	08-08, Site Security and Overall Site Control
		Underground utilities and features	08-10, Electrical Safety; 08-19, Underground Services Location and Protection
		Unstable ground	08-20, Unstable Ground
		Visibility	08-07, General Site Safety Requirements; 08-18, Traffic and Moving Equipment Hazards
Remedial injection	Task performed by SoundEarth	Chemicals	08-06, Chemical Hazard Controls; Table 1, Chemical Hazards
		General site safety	08-07, General Site Safety Requirements
		Emergency	08-02, Emergency Response Plan
		Heat stress/hypothermia	08-13, Temperature Extremes
		Noise	08-015, Noise and Hearing Protection
		Overhead electric utilities	08-10, Electrical Safety
		Powered tools and equipment	08-10, Electrical Safety
		PPE, meetings, inspections	08-07, General Site Safety Requirements

Tasks	Role	Hazard	References
Remedial Injection (continued)	Task Performed by SoundEarth	Pressurized Injectate	See Table 1, Chemical Hazards.
		Traffic/mobile equipment	08-18, Traffic and Moving Equipment Hazards
		Unsecure/uncontrolled Site	08-08, Site Security and Overall Site Control
		Unstable ground	08-20, Unstable Ground
Remediation System Installation	Subcontractor Observation	Chemicals	Table 1, Chemical Hazards; 08-06, Chemical Hazard Controls;
		Emergency response	08-02, Emergency Response Plan
		Energized machinery	08-10, Electrical Safety 08-12, Energy Control (Lockout/Tagout) Awareness
		Ergonomics	08-11, Ergonomics
		General site hazards	08-07, General Site Safety Requirements
		Heat stress/hypothermia	08-13, Temperature Extremes
		Noise	08-15, Noise and Hearing Protection
		Overhead utilities and features	08-10, Electrical Safety; 08-16, Overhead Hazards
		Powered tools and equipment	08-10, Electrical Safety;
		Underground utilities and features	08-10, Electrical Safety; 08-19, Underground Services Location and Protection
		Unsecure/uncontrolled Site	08-08, Site Security and Overall Site Control
		Traffic/mobile equipment	08-18, Traffic and Moving Equipment Hazards
		Unstable ground	08-20, Unstable Ground
		Visibility	08-07, General Site Safety Requirements; 08-18, Traffic and Moving Equipment Hazards

Tasks	Role	Hazard	References
Remediation System Operation	Task performed by SoundEarth	Chemicals	Table 1, Chemical Hazards; 08-06, Chemical Hazard Controls 08-17, Sample Collection
		Emergency response	08-02, Emergency Response Plan
		Energized machinery	08-10, Electrical Safety 08-12, Energy Control (Lockout/Tagout) Awareness
		Ergonomics	08-11, Ergonomics
		General site hazards	08-07, General Site Safety Requirements
		Heat stress/hypothermia	08-13, Temperature Extremes
		Noise	08-15, Noise and Hearing Protection
		Powered tools and equipment	08-10, Electrical Safety;
		Unsecure/uncontrolled Site	08-08, Site Security and Overall Site Control
		Traffic/mobile equipment	08-18, Traffic and Moving Equipment Hazards
		Unstable ground	08-20, Unstable Ground
		Visibility	08-07, General Site Safety Requirements; 08-18, Traffic and Moving Equipment Hazards

6.0 TASK-RELATED SITE HAZARD CONTROLS SUMMARY

The following controls are required for SoundEarth employees while performing work on the Property:

- Level D PPE, which includes hard hats, steel-toed boots, safety glasses, and a reflective safety vest.
- Nitrile gloves
- Traffic control devices in compliance with traffic control plans required for individual borings; delineators and/or traffic cones around drill rig
- Hearing protection
- Caution tape

- Splash shield during injections
- Metal plates
- Caution tape

ATTACHMENT A
ACKNOWLEDGEMENT AND AGREEMENT FORM



ACKNOWLEDGEMENT AND AGREEMENT FORM

I acknowledge that I have reviewed a copy of the Health and Safety Plan for this project, that I understand it, and that I agree to comply with all of its provisions. I also understand that I could be prohibited by the Site Manager/Health and Safety Officer or other SoundEarth personnel from working on this project if I fail to comply with any aspect of this Health and Safety Plan:

<hr/> <i>Name</i>	<hr/> <i>Signature</i>	<hr/> <i>Company</i>	<hr/> <i>Date</i>
<hr/> <i>Name</i>	<hr/> <i>Signature</i>	<hr/> <i>Company</i>	<hr/> <i>Date</i>
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<hr/> <i>Name</i>	<hr/> <i>Signature</i>	<hr/> <i>Company</i>	<hr/> <i>Date</i>

ATTACHMENT B
DAILY HEALTH AND SAFETY BRIEFING LOG



DAILY HEALTH AND SAFETY BRIEFING LOG

Date: _____ Start Time: _____

Sites Discussed: _____

Subjects Discussed: _____

ATTENDEES

Print Name

Signature

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Meeting Conducted by _____ Date Signed _____

**ATTACHMENT C
HOSPITAL ROUTE**

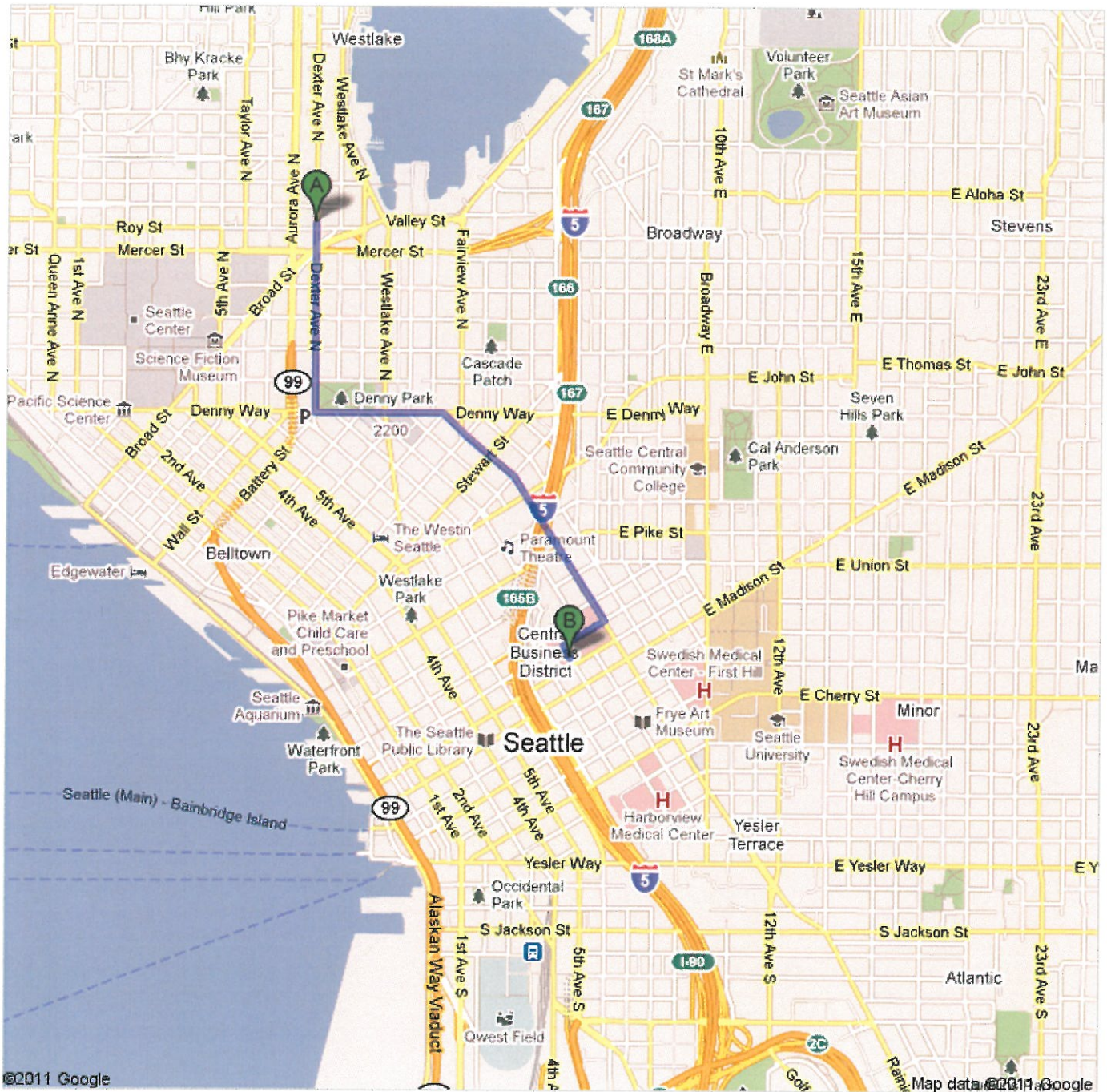


Directions to Virginia Mason Hospital: Seattle

925 Seneca Street, Seattle, WA 98101 - (206) 223-6600


1.7 mi – about 7 mins





Save trees. Go green!
Download Google Maps on your phone at google.com/gmm




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 700 Dexter Ave N, Seattle, WA 98109

-
1. Head **south** on **Dexter Ave N** toward **Roy St**
About 1 min go 0.5 mi
total 0.5 mi
 -  2. Turn left onto **Denny Way**
About 2 mins go 0.3 mi
total 0.8 mi
 -  3. Slight right onto **Boren Ave**
About 3 mins go 0.7 mi
total 1.5 mi
 -  4. Turn right onto **Seneca St** go 0.1 mi
total 1.6 mi
 -  5. Take the 1st left onto **9th Ave**
Destination will be on the left go 184 ft
total 1.7 mi

 **Virginia Mason Hospital: Seattle**
925 Seneca Street, Seattle, WA 98101 - (206) 223-6600

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

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Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.