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Engineering & Environmental Services

A Report Prepared for:
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FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN AMERICAN LINEN SUPPLY CO-DEXTER AVENUE SITE 700 DEXTER AVENUE NORTH SEATTLE, WASHINGTON

Agreed Order No. DE 14302
Facility Site Identification Number: 3573
Cleanup Site Identification Number: 12004

DECEMBER 4, 2019

By:

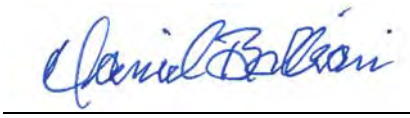

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF ACRONYMS AND ABBREVIATIONS

AO	Agreed Order
ARARs	Applicable or Relevant and Appropriate Requirements
AST	Aboveground Storage Tank
B&V	Black & Veatch
bgs	Below Ground Surface
BMRD	BMR-Dexter LLC
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAA	Cleanup Action Alternative
cDCE	cis-1,2-Dichloroethene
COC	Contaminant of Concern
CAP	Cleanup Action Plan
CCV	Continuing Calibration Verification
CSM	Conceptual Site Model
CSO	Combined Sewer Overflow
CVOCs	Chlorinated Volatile Organic Compounds
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
DOF	Dalton, Olmsted & Fuglevand, Inc.
DRO	Diesel-Range Organics
EA	Environmental Associates
Ecology	State of Washington Department of Ecology
EPA	United States Environmental Protection Agency
ERD	Enhanced Reductive Dechlorination
ERH/SVE	Electrical Resistance Heating/Soil Vapor Extraction
ESA	Endangered Species Act
ESC	ESC Lab Sciences
Farallon	Farallon Consulting L.L.C.
FS	Feasibility Study
GeoEngineers	GeoEngineers, Inc.
GeoTech	Geotech Consultants, Inc.
gpm	Gallons Per Minute
GRO	Gasoline-Range Organics
IHS	Indicator Hazardous Substance
LNAPL	Light Non-Aqueous Phase Liquid
LUST	Leaking Underground Storage Tank
MDL	Method Detection Limit
mg/kg	Milligrams Per Kilogram

LIST OF ACRONYMS AND ABBREVIATIONS (CONTINUED)

MTCA	Model Toxics Control Act
NAPL	Non-Aqueous Phase Liquid
NAVD 88	North American Vertical Datum of 1988
ORP	Oxidation-Reduction Potential
ORO	Oil-Range Organics
PCE	Tetrachloroethene
PES	PES Environmental, Inc.
PLP	Potentially Liable Person
PQL	Practical Quantitation Limit
psi	Pounds Per Square Inch
PVC	Polyvinyl Chloride
RAO	Remedial Action Objective
RDL	Reported Detection Limit
RI	Remedial Investigation
Roux	Roux Associates
ROW	Right-of-Way
SES	SoundEarth Strategies, Inc.
TCE	Trichloroethene
tDCE	trans-1,2-Dichloroethene
TOC	Total Organic Carbon
µg/L	Micrograms Per Liter
UST	Underground Storage Tank
VC	Vinyl Chloride
VCP	Voluntary Cleanup Program
VOCs	Volatile Organic Compounds
WAC	Washington Administrative Code
Windward	Windward Environmental LLC

1.0 INTRODUCTION

This remedial investigation ("RI") and feasibility study ("FS") work plan (referred to as the work plan or plan) has been prepared on behalf of BMR-Dexter LLC ("BMRD") for the American Linen Supply Co–Dexter Avenue Site ("Site") located at 700 Dexter Avenue North, Seattle, Washington (Figure 1). This work plan was prepared in accordance with the requirements of Sections VII.A through VII.D of Agreed Order No. DE 14302 ("AO") between the State of Washington Department of Ecology ("Ecology") and BMRD. The work plan describes the scope of work that will be performed to comply with the requirements of the AO and address data gaps. It references certain components of the 700 Dexter Avenue North interim action work plan (PES, 2018), such as the quality assurance project plan and site-specific health and safety plan, and incorporates the results interim action investigations and monitoring through February 2019.

The first draft of this work plan was prepared in March 2018. Since the submittal of that draft plan, additional investigations have been conducted to support the design and implementation of the interim action underway at the 700 Dexter Avenue North property. This revised work plan presents the results of those investigations and addresses Ecology's comments on the first draft of the plan. This RI/FS work plan also references certain components of the 700 Dexter Avenue North interim action work plan (PES, 2018), such as the quality assurance project plan and site-specific health and safety plan.

1.1 Definition of "Property" and "Site" for Purposes of a MTCA RI/FS

For the purpose of this work plan, the word "Site" will refer to an area where contamination released at the property located at 700 Dexter Avenue North ("Property") has come to be located, consistent with the definition of "site" or "facility" in the Washington Model Toxics Control Act (MTCA, Chapter 173-340 of the Washington Administrative Code ("WAC")). The word "Property" will refer to the area within the 700 Dexter Avenue North property boundary (Figure 1).

1.2 Purpose

The purpose of the RI/FS is to provide sufficient information regarding the nature and extent of contamination at the Site to allow Ecology to select a cleanup action consistent with MTCA. The RI's objective is to fill data gaps to complete the evaluation of the Site's physical characteristics and nature and extent of contamination associated with the Site. Information collected during this phase of the RI will be added to information generated during the previous studies at the Site (including reports prepared by SoundEarth Strategies, Inc. ("SES"), 2013b and 2013c) and will be used during the FS. The purpose of the FS will be to develop and evaluate cleanup action alternatives and recommend a preferred alternative for Site cleanup.

The work plan summarizes the Site background and data gathered through February 2019 and discusses what work will be implemented during the RI, including the rationale and locations of the work to be performed, sampling and analytical procedures, decontamination and waste management, health and safety, quality control/quality assurance, data evaluation, reporting, and the schedule of work. As discussed in Section 9.3, additional investigation may be required

based on the results of the work outlined in this work plan. Any additional work will be conducted consistent with a work plan supplement reviewed and approved by Ecology.

1.3 Report Organization

This technical memorandum is organized into 12 sections as follows:

Section 1 – Introduction: Provides the purpose of the work plan, defines the Site, and presents the organization of the work plan.

Section 2 – Site Background: Presents summaries of the location, history, and development of the Property, the surrounding properties, the regulatory history of the Site, and future Property use.

Section 3 – Environmental Setting: Provides a summary of the physical setting, climate, regional geology and hydrogeology, water supply wells near the Site, and surface water presence and use near the Site.

Section 4 –Site Investigations: Presents brief summaries of the environmental investigations conducted at the Site.

Section 5 –Independent and Interim Actions: Describes the independent and interim actions conducted and underway at the Property.

Section 6 – Summary of Site Conditions: Provides summaries of the Site geology, Site hydrogeology, and nature and extent of contamination.

Section 7 – Preliminary Conceptual Site Model: Provides a description of the preliminary conceptual site model for the Site.

Section 8 – Data Gaps: Presents a summary of the data gaps identified based on the previous investigation results, the independent actions conducted to date, and the preliminary conceptual site model.

Section 9 – Remedial Investigation: Presents the proposed RI scope of work, including the objectives of the RI, the rationale and approach to RI implementation, and an outline of the RI scope of work.

Section 10 – Feasibility Study: Presents the studies that will be performed to develop and evaluate cleanup action alternatives based on the results of the RI, the independent actions, and interim action performed at the Property.

Section 11 – Reporting and Schedule: Presents the reports to be submitted to Ecology during the RI/FS and the schedule of reporting.

Section 12 – References: Lists the sources of information referenced in the document.

2.0 SITE BACKGROUND

This section summarizes the Property location and description, the Property history and development, the surrounding facilities, the regulatory history of the Site, and future Property use.

2.1 Property Location and Description

BMRD owns the Property at 700 Dexter Avenue North in Seattle, Washington (Figure 1). Dexter Avenue North bounds the Property to the west, Valley Street bounds the Property to the north, 8th Avenue North bounds the Property to the east, and Roy Street bounds the Property to the south. A recent ALTA Survey of the Property shows that the Property encompasses 59,822 square feet (approximately 1.4 acres). The Property is located in the northeast quarter of Section 30, Township 25 North, Range 4 East, Willamette Meridian in King County, Washington. It consists of one tax parcel (King County Assessor Parcel Number 224900-0285-03) and is currently zoned for mixed use (Seattle Mixed South Lake Union Incentive Height 160/85-240). All but the southwest corner of the Property lies within the U.S. Government Meander Line buffer that designates the historic Lake Union shoreline. Properties within this buffer are considered to have the potential for archeological resources.

As of February 2018, before Interim Action work began, there were no buildings present at the Property. The Property was almost entirely covered by concrete or asphalt, with small patches of vegetation or exposed soil (Figure 2). Concrete building foundations or slabs covered the surface of the northwest quarter of the Property, the southern half of the Property, and the southeast portion of the northeast quarter of the Property. Most of the northeast quarter of the Property is covered with asphalt. Most of the Property lies below the surrounding streets due to the now-exposed basements of the former buildings. The building formerly in the southwest quarter of the Property did not have a basement under the southern half of it, so that portion of the Property is at grade with the surrounding streets, as is the part of the Property along the northern and eastern Property lines in the northeast quarter. The Property is relatively flat, with an elevation of generally 40 feet (it ranges from 36 to 42 feet) above the North American Vertical Datum of 1988 ("NAVD 88") across most of the Property. The greatest variance in the surface elevation occurs in the southwest corner, where the surface elevation is approximately 51.9 feet without the basement level. Although full utility services are available in the area (water, sanitary sewer, and storm drainage by Seattle Public Utilities, power by Seattle City Light, natural gas by Puget Sound Energy, and telecommunications by Century Link), permanent utilities are not currently hooked up to the Property. Section 2.5 describes redevelopment plans for the Property.

2.2 Property History and Development

This section provides a brief summary of the Property history and development. The 2013 Draft RI Report (SES, 2013b), which served as a source of this summary, provides more detailed information, including copies of city records and photographs. Appendix A presents selected historical photographs and building plans of the Property. Former Property owners included American Linen Supply Company (prior to April 28, 2015) and 700 Dexter LLC (between April 28, 2015, and January 8, 2017).

2.2.1 Buildings and Operations

Residences existed on the Property from at least 1893 until 1925. American Linen Supply Company acquired the southern half of the Property in 1925 and developed it into an industrial laundry operation. Building A, the first of the three buildings that comprised the American Linen development, was constructed in 1925 and began operations as a commercial laundry (Figure 2). The eastern part of Building A occupied the southeast quadrant of the Property and was constructed with a basement, first floor, and overhead mezzanine. This part of Building A included a boiler room in the northwest corner of the basement, an incinerator to the south of the boiler room, and a freight elevator to the southeast of the incinerator (see Figure 3 and the building plans in Appendix A). The western part of Building A occupied the southern half of the southwest quadrant of the Property and was constructed with a first floor and overhead mezzanine. A refueling facility (i.e., gasoline service station) was built on the northwest corner of the Property in 1930 (Figures 2 and 3). The refueling facility reportedly had several underground storage tanks ("USTs") and two dispenser islands.

In 1947, building additions were reportedly constructed by American Linen. The western part of Building A was expanded to the north so that Building A occupied the entire southern half of the Property. The Building A expansion was constructed with a basement, first floor, and overhead mezzanine. The original boiler room was replaced by a new boiler room constructed in the northwest corner of the Building A basement (just east of Dexter Avenue North), with four 6,000-gallon USTs supplying heating oil for the boilers installed to the south and east of the new boiler room. Also in 1947, Building B (a single-story, masonry garage) was built as an addition to the northeastern corner of Building A (Figure 2). Building B initially operated as a parking garage and automotive repair facility.

In 1966, Building C was built in the northwest quadrant of the Property (Figure 2), and the refueling facility at that location was demolished. Building C contained three levels: a basement, first floor, and overhead mezzanine. Between 1947 and 1966, a fuel dispenser was constructed, and up to three USTs were installed along the northern Property boundary in the northeast quadrant of the Property.

According to building plans and available reports (SoundEarth Strategies, 2013b and 2015), the following laundry and dry cleaning operations occurred at the Property:

- Laundry operations were in the northeast portion of the first floor of Building A as shown on 1946 and 1947 building plans (Appendix A). Wood washers, metal washers, extractors, and tumblers were located on the first floor east of the underlying original boiler room, with a starch cooker, two starch extractors, two tubs, and two press units located along the east wall of this area. Feed tables were located east of the freight elevator, and a receiving area was located south of the feed tables. A July 1966 building plan showing the Building C addition indicates that washing also took place on the first floor of the original western part of Building A, and that ironing took place on the first floor to the east of the newer boiler room;
- Four trenches shown in 1940s building plans drained water from the first-floor laundry operations to drains located in the northeast part of the Building A basement. The 2-foot-wide trenches were constructed flush with the first-floor surface and

4 inches deep on the west end sloping to 6 inches deep on the east end. Although not shown on any building plan, the basement drains presumably connected to either the southern or eastern sanitary sewer lines (Figure 3).

- Dry cleaning was conducted on the Property as early as 1966, as shown on 1965 and 1966 building plans (Appendix A). SES (2013b) indicates that dry cleaning machines operated in the western part of Building A and reportedly leaked solvents into the subsurface. SES (2015) shows the dry cleaning machines located on the first floor of Building A to the east of the newer boiler room (Figure 4). Plans for Building C indicate conflicting information about where dry cleaning took place. A July 1966 plan indicates that no dry cleaning was performed in Building A and that the first floor of Building C was a "high bay area – dry cleaning plant" with non-inflammable solvents/liquids. A December 1965 building plan, however, indicates that the first floor of Building C was a "dry cleaning and laundry work area," and a 1970 building plan indicates that the first floor of Building C was only a "garment sorting area." A December 1965 building plan indicates that the Building C basement was a truck loading and storage area;
- As reported by SES (2013b) and shown on a September 1978 building plan, three 6-foot diameter horizontal, aboveground storage tanks ("ASTs") were located in the basement of the northeast part of Building A. The use of these ASTs is indicated on the building plan. A sump (presumably Sump No. 3) was shown under one of the concrete tank slabs; and
- By 1990, the dry cleaning machines had been removed, and in the mid-1990s, commercial laundry operations ceased (SES, 2013a).

A wastewater treatment facility for the commercial laundry operations was constructed in Building B in 1986. The treatment facility included several ASTs containing acids, caustics, polymers, sludge, and water (see Appendix A). Waste material from the wastewater treatment facility was either discharged through the sewer system or conveyed into a disposal container to the north of Building B. The wastewater treatment system was removed when the commercial laundry operations ended in the mid-1990s.

The buildings were subsequently leased to various tenants, including several automotive repair shops, a bakery, and a car rental office. A 1990 building plan (Appendix A) indicates that two paint booths were located on the "main floor," east of the newer boiler room. The buildings on the Property were demolished between January 14 and March 8, 2013.

2.2.2 Subsurface Utilities

Based on the available records, the following utilities existed outside the buildings at the Property (Figure 2):

1. **Sanitary Sewer Lines.** A 1926 Seattle Engineering Department side sewer card shows five sanitary side-sewers running between the east side of the Property and the 8-inch-diameter combined sewer line located beneath the 8th Avenue North Right-of-Way ("ROW"). Four were connected to Building A, and one was connected to the Building B area. An oil/water separator was located in the southeast corner of the

yard area and was tied to one of the side sewer lines that connected to the 8-inch-diameter combined sewer line located beneath the 8th Avenue North ROW. Although the status of the side-sewer lines is currently unknown, they are all shown on the most current City of Seattle sewer map.

2. **Storm Drains.** Three catch basins were located on the west side of the yard area in the northeastern quadrant of the Property. The catch basins were connected to a storm drain that ran easterly to connect to the combined sewer in 8th Avenue North (see the basement floor plan in Appendix A). Additionally, SES reported a north-south trending trench drain was present in the yard in the northern portion of the Property.

3. **Natural Gas Line.** A gas line was located immediately west of the storm drain line along the west side of the yard area in the northeastern quadrant of the Property. The line connected to the 4-inch-diameter main line beneath the southern sidewalk of Valley Street.

4. **Electrical Lines.** Power to the Property came from a power pole in the eastern sidewalk of 8th Avenue North ROW. Power lines ran through an underground electrical conduit to an electrical vault in the southwest corner of the yard area in the northeastern quadrant of the Property.

5. **Water Lines.** One water line from the 12-inch-diameter cast iron water line beneath 8th Avenue North entered the Property from the east, and three water lines entered the Property from the west. Of the three western lines, one connected to the south part of Building A, and the other two connected to Building C.

6. **Tank 5.** A tank installed before 1966 (Tank 5) was located in the south part of the yard area in the northeastern quadrant of the Property. The tank reportedly functioned as a cooling tank for laundry wastewater. SES oversaw the removal of this tank in 2013 (SES, 2013b).

7. **Ducts.** Four 4-inch-diameter polyvinyl chloride ("PVC") ducts were installed beneath the Property in 1984 near the Roy and Dexter intersection. The purpose of the PVC ducts was not indicated in the documents reviewed by SES (2013b).

SES summarized a review of the subsurface utilities associated with operations in the buildings at the Property (SES, 2013b). Following is a brief summary by building (Figure 2):

1. **Building A.** Subsurface utilities beneath the Building A basement included six sumps (Nos. 1 through 4, 7, and 8) in the north central part of the building, a sump in the southeastern part of the building (in an area formerly used as a garage), the eastern sanitary sewer line, and a drainage system associated with the boilers installed in 1947. Drainage components in the boiler room included Sump No. 8 (a 3.5-foot by 3.5-foot by 3.5-foot sump covered with a wood grate that was connected to the sewer system, according to an April 1947 building plan), two boiler blow down pits, two floor drains between the boiler pits (according to SES (2013b), although not shown on any building plan), three 4-inch floor drains to the west and south of the boiler

pits, and two sets of trenches to the north and south of the boiler pits. The northern trench (12 inches wide by 12 inches deep and covered with a steel grate) was for boiler blow-off, and the southern trench (18 inches wide and from 18 to 30 inches deep) reportedly contained oil and steam piping. A trench to the south of the original boiler room was reportedly filled with concrete in 1947. SES indicated that Sump No. 7 in the northeast corner of the building was likely removed or filled in preparation for the construction of Building B in 1947. SES (2013b) indicated that product delivery lines for the 6,000-gallon USTs still exist beneath the sidewalk on the east side of Dexter Avenue North and still run beneath the Property. Additionally, water treatment trenches and Sump No. 6 were located beneath the first floor of the building.

2. **Building B.** A wastewater treatment plant for the commercial laundry operations operated in Building B between 1986 and the mid-1990s (Figure 3). The plant included pumps, a sump, drains, and a sanitary sewer line beneath the wastewater treatment plant that connected the plant to the flow control structure in the northeast quadrant of the Property.

3. **Building C.** Subsurface utilities beneath Building C included a trench drain located along the southern wall of the building, 4-inch-diameter floor drains located under the central and northern part of the building that exited the northeastern part of the building and connected to the combined sewer line beneath 8th Avenue North, a sump (No. 5), and natural gas lines connected to the boiler system in Building A. Additionally, several 5-inch-diameter pipe sleeves were located on the first floor of Building C adjacent to load-bearing columns in the former dry cleaning area; the pipe sleeves ran from the first floor into the basement.

2.3 Surrounding Facilities and Potential Off-Site Sources

This section describes the properties closest to the Property, which are located across Dexter Avenue North, Valley Street, 8th Avenue North, and Roy Street (Figure 5). SES RI Figure 7 (see Appendix A) depicts the surrounding properties and potential historical sources of subsurface contamination.

2.3.1 West of the Property

The block immediately west of Dexter Avenue North from the Property consists of three tax parcels, two of which front Dexter Avenue North: 701 Dexter Avenue North on the south and 717 Dexter Avenue North on the north. The 0.62-acre (27,127- square-foot) south parcel contains an office building that was built in 1984. The building has an at-grade parking garage. The 0.33-acre (14,520- square-foot) north parcel was developed as an apartment complex in 2015, with street level retail shops and sub-grade parking. The north parcel previously contained a one-story masonry building built in 1928 that most recently housed an auto shop for the sales and repair of European cars; in 2012, Ecology issued a determination that no further action was required with regard to soil around a heating oil UST that was removed from the north parcel in 2011.

2.3.2 North of the Property

The property immediately north of Valley Street consists of one tax parcel with a street address of 810 Dexter Avenue North. The 1.43-acre (62,250-square-foot) parcel occupies the entire block and was developed as an apartment complex in 2015, with street level retail shops and sub-grade parking. Prior to 2015, the west half of the property contained a two-story office and warehouse building with a basement, and the east half of the property contained an asphalt-paved parking lot. The property is listed in Ecology's site cleanup database as the Seattle School District 1 Facilities Building (Cleanup Site ID 9747). A release report for a leaking underground storage tank ("LUST") was issued in 1989, with confirmed soil concentrations of gasoline-range organics ("GRO"), benzene, and other hydrocarbons above cleanup levels after removal of six USTs and a listed Site status of "Cleanup Started". Investigation and over-excavation of petroleum-contaminated soil was conducted in 1989, with soil above field screening criteria removed for treatment at another facility (Hart Crowser, 1989 and 1990).

2.3.3 East of the Property

Seattle City Light owns the property immediately east of 8th Avenue North, which consists of one tax parcel with a street address of 800 Aloha Street (formerly designated 800 Roy Street by SES). The 1.54-acre (67,025-square-foot) parcel occupies the entire west half of the block (i.e., west of the alley) and contains a one-story, masonry warehouse with a basement that was built in 1926 on the southern half of the property. The 27,756-square-foot basement is unfinished and 16 feet high (SES, 2013b and King County Assessor records). An asphalt-paved parking lot with storage structures is located to the north of the building. The building is currently used as a maintenance facility for Seattle City Light vehicles and equipment, and the paved lot north of the building is currently used as a self-pay parking lot. Historically, a garage in the northern part of the building's basement was used to repair, refuel, and wash vehicles. Transformer testing was also performed in the basement. Historically, vehicles, transformers, fuels, and equipment were stored on the northern half of the property. At least two generations of USTs and fuel dispensers were installed on the northern part of the parcel between 1944 and 1955. Two USTs were reportedly removed in 1993 (SES, 2013b). The Seattle City Light property is listed in Ecology's site cleanup database as the Seattle Roy Aloha Shops (Cleanup Site ID 11216). LUST notification was made in 1992, with confirmed soil and groundwater concentrations of GRO and benzene above cleanup levels and a listed Site status of "Cleanup Started".

The area between 9th Avenue North and the alley on the east side of 800 Aloha Street consists of four tax parcels with street addresses of 701 9th Avenue North, 711 9th Avenue North, 739 9th Avenue North, and 753 9th Avenue North. These properties were created by filling in the southern portion of the Lake Union shoreline in the early 1900s (SES, 2013b). In 1922, a Mack International Motor Truck Corporation showroom and service shop were built on the southern half of the property. Three buildings were constructed on the property between 1946 and 1950 that contained an automotive welding factory, automotive repair shops, and general retail. The parcels contained as many as four USTs for storage of waste oil, heating oil, and gasoline, with Ecology and City of Seattle records documenting the removal of four USTs from the parcels. By 1980, automotive dealerships and retail tenants occupied the parcels. Petroleum-contaminated soil was encountered when three of the USTs located in the northernmost parcel were removed

in 1992. An auto body facility began operating in the central part of the property in 1996 and installed a flammable liquids storage room and a spray paint booth.

The area between 9th Avenue North, Westlake Avenue North, and Broad Street consists of three tax parcels with street addresses of 900 Roy Street, 707 Westlake Avenue North, and 731 Westlake Avenue North. These properties were created by filling in the southern portion of the Lake Union shoreline in the early 1900s (SES, 2013b). Per SES (2013b), the parcels were developed in 1914, with multiple renovations to the buildings over time. Property uses included a laundry facility initially, with subsequent uses as a gasoline service station and automotive repair shop, a lithograph manufacturer, a sheet metal fabrication and painting shop, an automotive repair shop, an automotive sales and repair facility, and more recently industrial, food service, retail, and residential uses. Multiple USTs at the properties were used to store heating oil, fuel, and waste oil.

2.3.4 South of the Property

The property immediately south of Roy Street consists of four tax parcels with street addresses of 816 Mercer Street, 714 Mercer Street, 702 Roy Street, and 801 Roy Street. The four parcels total 1.45 acres (63,105 square feet), and all four parcels are currently vacant and being used for construction staging and parking.

Historically, an auto repair shop, gas station, paint manufacturer, restaurant, and automotive upholstery shop occupied portions of the property. As seen on Figure 3, large-diameter sewer lines constructed as part of the Denny Way Combined Sewer Overflow ("CSO") project lie beneath the south side of the Roy Street ROW. Besides the large-diameter pipelines, the major component of the project near the Property is the East Tunnel Portal/Drop Structure located just south of the intersection of Roy Street and 8th Avenue North. The approximately 70-foot-deep vertical shaft was used during construction of the Mercer Street Tunnel and the Lake Union and South Lake Union CSO pipelines.

2.3.5 Southeast of the Property

The 601 Westlake Avenue North property was developed in the early 1900s, with multiple historical uses. Property uses included a steam laundry facility, a bottling facility, scrap paper and wood storage, and automobile storage, repair, fueling, and sales (Ecology, 2015a; Farallon Consulting L.L.C. ("Farallon"), 2015). This 1.24-acre property is currently occupied by an office building constructed in 2015. During property redevelopment, USTs were decommissioned and removed, cleanup of petroleum hydrocarbons at the property was conducted, and a dewatering system was operated to assist with construction of the building foundation and subsurface structures. The dewatering system operated between November 2013 and December 2014, pumping at rates up to 377 gallons per minute ("gpm"; Farallon, 2015). A treatment system was employed to treat contaminants, including chlorinated volatile organic compounds ("CVOCs") in the pumped water prior to discharge to Lake Union. A brief discussion of the effects of the pumping on the Site is presented in Section 6.2.2.

The 630 Westlake Ave North property occupies 1.6-acres that are currently undeveloped and used for construction staging. Prior uses include multiple automobile service stations, a lumber

mill, a creamery, a brewery, a restaurant, boat maintenance, cabinet manufacturing, and automobile service and detailing (Delta, 2007). Extensive investigative and cleanup work has been performed at the property since the 1980s, following an 80,000-gallon gasoline release from one of the service stations. Cleanup actions included product recovery, soil vapor extraction, air sparging, and soil excavation (including excavation in the Westlake Avenue North ROW). A groundwater extraction system was operated in the latter part of 2017 at the property. The system was reportedly installed to capture residual volatile organic compounds ("VOCs") that might otherwise be pumped by construction dewatering wells at the two properties to the east. The system consisted of four 6-inch-diameter, 92-foot-deep PVC extraction wells, screened from 32 to 92 feet below ground surface ("bgs"), submersible pumps each capable of pumping up to 80 gpm, piping, and a water treatment system. The system discharged the treated water to Lake Union. The four extraction wells (IA-1 through IA-4) were located in a north-south line in the middle of the property. A brief discussion of the effects of the pumping on the Site is presented in Section 6.2.2.

2.4 Regulatory History

In November 2012, 700 Dexter LLC (the previous Property owner) entered Ecology's VCP (VCP Project No. NW2652) to begin addressing subsurface contamination at the Site. Under the VCP, 700 Dexter LLC submitted a draft RI Report (SES, 2013b) and a draft FS Report (SES, 2013c). In 2015, 700 Dexter LLC requested that future cleanup work be administered under a formal agreement with Ecology, so Ecology terminated their participation in the VCP. Subsequently, Ecology issued determination of potential liable party ("PLP") status letters to 700 Dexter LLC and American Linen in December 2015, based on American Linen being the owner and operator of the Property at the time of disposal or release of hazardous substances and 700 Dexter LLC having owned and possessed a hazardous substance and having arranged for treatment of the hazardous substance at the Property. On January 12, 2017, Ecology also issued a determination of PLP status letter to BMRD as the current owner of the Property.

BMRD and Ecology entered into AO No. DE 14302 with an effective date of October 24, 2017. The AO requires that BMRD perform an RI/FS and prepare a preliminary draft Cleanup Action Plan ("DCAP"). The RI/FS required by the AO is the subject of this work plan. The AO also describes the requirements for performing an interim action, which is the subject of a separate work plan (PES, 2018). The Interim Action (PES, 2018) is underway at the Property and is described in Section 5.2 below.

2.5 Future Property Use

The Property is currently scheduled to be redeveloped. The redevelopment design consists of three (3) levels of underground parking (below the elevation of 8th Avenue), a partial subgrade level for parking and support facilities located between the elevation of Dexter Avenue North and 8th Avenue North, on-street retail, and two adjacent 14-story office towers. The parking garage and foundations will require excavations to extend to elevations ranging from 10.7 to 0.7 feet. The depth of the excavations will vary with location on the Property based on variability in the ground surface elevations. For a large portion of the Property where the ground surface elevation is approximately 40 feet (NAVD 88), the excavation depth for construction of the garage and foundations will range from 29.3 to 39.3 feet below existing ground surface.

3.0 ENVIRONMENTAL SETTING

This section summarizes the physical setting, climate, regional geology and hydrogeology, water supply wells near the Site, and surface water presence and use near the Site.

3.1 Physical Setting

The Property is located within the Puget Lowland physiographic province, a broad, low-lying region situated between the Cascade Range to the east and the Olympic Mountains to the west. Alluvial valleys and plains, and glacially formed or modified hills and ridges dominate the lowland. The Property lies on the southeast flank of Queen Anne Hill in the South Lake Union district north of downtown Seattle, with Lake Union to the northeast, Capitol Hill to the east, and Elliott Bay to the southwest. Most of the Property is relatively flat, with an elevation of approximately 40 feet (NAVD 88). Variances in the surface elevation occur in the southwest corner, where the surface elevation is approximately 51.9 feet, and in the northeast quadrant, where the surface elevation varies from approximately 36 to 42 feet. The area immediately around the Property slopes gently to the east.

3.2 Climate

Air masses originating over the Pacific Ocean strongly affect the climate of the Puget Sound Lowland, with generally overcast, cool, damp, and mild weather during the autumn, winter, and spring, and warm and dry weather during the summer. The annual precipitation ranges from about 30 to over 60 inches in the lowland. The average annual precipitation in the Seattle area is about 39 inches, with approximately three-quarters of it falling between October and March.

Annual snowfall averages approximately 12 inches, falling between November and March. The prevailing wind direction year-round is from the south. The average monthly maximum temperature ranges from a low of 45 degrees Fahrenheit in January to a high of 75 degrees in July and August. Monthly minimum temperature averages vary from a low of 35 degrees in January to a high of 55 degrees in July and August.

3.3 Regional Geology

The Puget Sound Region is underlain by a thick accumulation of Quaternary sediment of alluvial and glacial origin. The shallowest sediments consist primarily of inter-layered and/or sequential river, lake, fan, and terrace deposits of sand, silt, and clay deposited on top of Pleistocene glacial deposits. The Property is located in the southern part of the Puget Sound Lowland, a broad, relatively level glacial drift plain dissected by a network of deep marine embayments. The Property is located at the edge of Queen Anne Hill and the Lake Union Depression. The portion of Seattle where the Property is located underwent extensive excavation and filling in the early 1900s, with removal of Denny Hill to the southwest and the filling in of the southernmost portion of Lake Union. The fill is reported to be greater than 25 feet thick in some locations.

The geologic units mapped in the vicinity of the Property from youngest to oldest include Quaternary lacustrine deposits in the immediate vicinity of the Property and to the east, Quaternary Vashon recessional lacustrine deposits and ice contact deposits to the south and southwest, Quaternary Vashon till and advance outwash to the west, and Quaternary Vashon

lacustrine and pre-Vashon deposits to the north (Booth et al, 2009). The thickness of unconsolidated deposits in the area is over 2,700 feet (Jones, 1999). The Property lies approximately 2 miles north of the Seattle Fault Zone, a seismically active area with multiple strands of the Seattle fault present.

3.4 Regional Hydrogeology

The principal aquifers in the Puget Sound Region are in glacial drift that, along with finer grained interglacial sediments, underlies the basin lowland to depths of more than 1,000 feet and in alluvial deposits that underlie the major lowland and mountain river valleys. In the Puget Sound region, shallow groundwater flow direction often mimics the surface topography, with deeper groundwater more influenced by aquifer geometry and discharge location (Vacarro et al, 1998). Groundwater typically flows from areas of high elevation to areas of low elevation. In addition, shallow groundwater flow typically migrates toward nearby surface water bodies. In the South Lake Union area, groundwater recharge occurs in unpaved locations, most importantly at higher elevations, with shallower groundwater flow toward Lake Union. Groundwater flow in the deeper glacial deposits is more complicated, with components of flow both toward Elliott Bay and to the south in the area south of Lake Union. Leaking pipes could influence groundwater flow locally.

3.5 Water Supply Wells

In October 2019, the Ecology well logs, Ecology water right, and King County groundwater well databases were queried for records of beneficial water use within 1 mile of the Property. The database search indicated potential groundwater use at two properties:

- **100 Fourth Avenue North:** Two potential water supply wells are listed in the Ecology water well logs database at this location, approximately 0.5-mile southwest of the Property. The wells were drilled to depths of 148 and 155 feet bgs in 1999 and 2001. Both wells were completed with 10 feet of well screen at the bottom of the well. The static groundwater levels in the wells were reported to be between 77 and 80 feet bgs. Based on the reported location of the wells and groundwater flow in the area, the well locations are upgradient of the Site. No record of the wells exists in the Ecology water right or King County groundwater well databases. The use of the wells is unknown, but given the availability of city water, it is unlikely that they are used as a potable water source.
- **300 Boren Avenue North:** Ecology's water right database has water right records for a well located at 300 Boren Avenue North, approximately 0.5-mile southeast of the Property. The database has a water right claim filed in 1971 and a certificate of groundwater right issued in 1973, both for an industrial well with a maximum pumping rate of 250 gpm. Based on the property location and groundwater flow in the area, the property is upgradient of the eastern part of the Site. The property has been redeveloped for non-industrial use, and it is unknown if the well still exists.

3.6 Surface Water

3.6.1 Area Surface Water

The Property lies in the Cedar-Sammamish Watershed, a roughly rectangular-shaped watershed approximately bounded by the Cascade Mountain range to the southeast, south Everett to the north, and downtown Seattle to the south. Major surface water bodies in the watershed include Lake Washington, Lake Sammamish, Lake Union, the Sammamish River, and the Cedar River, with numerous other small lakes and creeks on the upland plain. The closest surface water bodies to the Property are Lake Union, located approximately 570 feet northeast of the northeast corner of the Property, and Puget Sound, located approximately 1 mile southwest of the southwest corner of the Property (Figure 1).

The U.S. Army Corps of Engineers ("USACE") regulates the operation of the Ballard Locks and monitors the water levels and water quality at stations located along the waterways, in Lake Union, and in Lake Washington. The USACE maintain the water level in the waterways and lakes between approximately between 20.0 and 22.0 feet (Corps of Engineers Datum, equivalent to approximately 16.78 and 18.78 feet NAVD 88, respectively). The USACE maintains water elevations closer to the minimum during the winter months to allow for maintenance on waterside structures, to minimize wave and erosion damage during winter storms, and to provide storage space for higher winter inflow. Higher water elevations are maintained in the summer months to assist in operating the locks, the saltwater return system, and the fish flume and ladder. The average water depth of Lake Union is 32 feet.

The Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A-600) lists the beneficial uses of Lake Union as salmonid spawning, rearing, and migration; primary contact recreation; domestic, industrial, and agricultural water supply; stock watering, wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values. WAC 173-201A-600 lists the beneficial uses of Elliott Bay as excellent salmonid spawning, rearing, and migration; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning; shellfish harvesting; primary contact recreation; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values.

3.6.2 Surface Water Use Near the Property

PES reviewed agency databases documenting surface water use near the Property. The databases reviewed in May 2017 included the state of Washington Department of Health ("DOH") water systems database and the Ecology water resources explorer database. The databases were reviewed for documentation of potential water uses within a 1-mile radius of the Property. No surface water rights were identified for Lake Union or Puget Sound.

4.0 SITE INVESTIGATIONS

This section summarizes the previous environmental investigations conducted at the Site. Site investigations have been conducted since 1992. The cumulative investigations conducted at the Site have been extensive and detailed. Investigations included drilling and sampling soil and groundwater from 60 temporary borings, excavating 19 test pits, installing and sampling 114 monitoring wells, installing and sampling 64 injection wells, installing and sampling 3 soil vapor probes, installing 5 test pumping wells and 3 observation wells, conducting 13 aquifer (slug) tests, measuring groundwater levels in 9 partial or complete events, and collecting approximately 1,360 soil and 570 groundwater samples for laboratory analysis. Soil and groundwater samples were submitted for laboratory analysis of primarily CVOCs and/or petroleum hydrocarbon related constituents. Subsurface explorations have been located from Aloha Street on the north to Mercer Street on the south, and from Dexter Avenue North on the west to Westlake Avenue North on the east. The maximum depth explored during these investigations was 145 feet bgs.

Following is a brief summary of the investigations conducted at the Site. The Final Interim Action Work Plan ("IAWP", PES, 2018) presents a more expansive summary of the investigations conducted through April 2018, with additional detail provided in the Draft RI Report (SES, 2013b), Draft Cleanup Action Plan (SES, 2015), and Draft Interim Action Work Plan (SES, 2016). Additional investigations were conducted after April 2018 during implementation of the Property interim action, and a description of these investigations is provided below. They include additional temporary borings and additional injection wells installed in 2018, additional deep monitoring wells installed in January 2019, an additional groundwater level monitoring event conducted in March 2019, and additional groundwater samples collected in October 2018, December 2018, and January/February 2019. The original investigation sources are listed below. Figures 6 and 7 show the boring and well locations, Table 1 presents the well completion details (where known), Appendix B provides the boring logs not already provided in the IAWP, and Appendix C provides summary data tables.

4.1 Investigations Conducted Through 2016

Following is a list of the investigations conducted at the Site between 1992 and 2016. A detailed summary of these investigations was presented in the Public Review Interim Action Work Plan previously submitted to Ecology:

1. 1992 Roux Associates ("Roux") Phase I Environmental Site Assessment (Roux, 1992).

2. 1992 Roux Phase II Environmental Site Assessment (Roux, 1993). MW1 through MW6 (which SES subsequently renamed R-MW1 through R-MW6) were installed at and adjacent to the Property.

3. 1997 Black and Veatch ("B&V") Phase II Environmental Site Assessment (B&V, 1998), which included drilling 56 borings (53 completed as monitoring wells), excavation of 15 test pits, and installation of 5 pumping wells and 3 observation wells. Nine of the borings (BB-5, BB-7, BB-8, BB-10, BB-12, BB-13, BB-14,

TB-12, and TB-18) and two pumping wells (PW-1 and PW-4) were located near the Property.

4. 2000 ThermoRetec Soil and Groundwater Testing Under the Building (ThermoRetec, 2000), including drilling nine borings (B-1 through B-3, B-4A, B-4B, B-4C, and B-5 through B-10) on the Property.

5. 2001 GeoEngineers, Inc. ("GeoEngineers") Supplemental Remedial Investigation (GeoEngineers, 2002), including drilling one soil boring (SB4) and three monitoring wells (MW1 through MW3). To avoid confusion with other soil borings and wells, SES subsequently added the prefix "G-" in front of the boring and well names.

6. 1992 through 2002 Subsurface Investigations at 800 Aloha Street during UST removal (SCS, 1992; Retec, 1993 and 1995). Besides excavation sampling, 10 soil borings were drilled, and 12 monitoring wells (MW-1 through MW-10, SCL-MW101, and MCL-MW105) were installed.

7. 1992 Subsurface Investigation at 753 9th Avenue, which were conducted by Environmental Associates Inc. ("EA"; SES, 2013b) and GeoTech Consultants, Inc. ("GeoTech", 1992). The investigations involved excavating two test pits, drilling three monitoring wells within the Westlake Avenue North ROW, and soil sampling during UST removal.

8. 2004 and 2009 Groundwater Sampling in five on-Property wells and four off-Property wells (Dalton, Olmsted & Fuglevand, Inc. ("DOF"), 2004 and 2009).

9. 2008 CH2M Hill 9th Avenue Sewer Upgrade Environmental Investigation, which included collecting soil and reconnaissance groundwater samples from four temporary borings drilled in the 9th Avenue North ROW (CH2M Hill, 2008).

10. 2010 and 2011 SES Groundwater Sampling Events, including collection of samples in five off-Property wells in May 2010, and in six on-Property wells and five off-Property wells in June 2011 (SES, 2013b).

11. 2011 and 2012 SES Preferred Pathway Investigation, which included sludge sampling in sewer cleanouts and sumps, soil sampling below one sump, and soil sampling in two test pits (SES, 2013b).

12. 2012 Windward Environmental LLC ("Windward") Subsurface Soil and Groundwater Investigations (Windward, 2012), including installation and sampling of MW-01 through MW-04 (later renamed W-MW-01 through W-MW-04 by SES) and groundwater sampling in six on-Property wells and five off-Property wells.

13. 2012 through 2016 SES Remedial Investigation, which included collecting 136 soil samples from 51 soil borings and monitoring well borings (B101 through B128, B130, B131, DB01 through DB14, P01 through P06, and IW06), collecting 56 reconnaissance groundwater samples from 20 borings (B101 through B106, B115, B116, B122, B124, B126, DB01 through DB05, DB05A, DB10, DB13, and DB14),

installing 30 monitoring wells (B101 through B128, B130, and B131, each well named with an "MW" prefix), installing and sampling 3 soil vapor probes (SV01, SV02, and SV03), conducting 13 aquifer (slug) tests, measuring groundwater levels during 8 events, and collecting 205 groundwater samples from 59 wells between July 2012 and March 2016 (SES, 2013b and 2016). Table 2 provides the slug test results, Table 3 provides the groundwater elevation data, and Appendix C provides the analytical data.

4.2 2017 Investigation Work

PES conducted investigations in 2017 to provide current groundwater data and to fill gaps in the data set needed prior to proposing and initiating an interim action at the Property (PES, 2018). These data gaps were identified by Ecology in 2015 (Ecology, 2015b) and included the following:

- Delineation of the lateral and vertical extent of tetrachloroethene ("PCE") in shallow soil and exceeding the state dangerous waste criteria;
- Delineation of the vertical extent of soil contamination at the Property;
- Delineation of the vertical extent of CVOCs in groundwater beneath the Property sumps; and
- Documentation of the current conditions in the area treated by ERH/SVE.

The investigations conducted at the Site in 2017 also addressed some of the Site-wide data gaps (see Table 4) by providing significantly more soil and groundwater data both on and off the Property. Additionally, a geotechnical investigation conducted to generate data as part of the Property redevelopment also collected limited environmental data. Table 5 summarizes the scope of work of the 2017 monitoring and investigation, and Figures 6 and 7 show the 2017 monitoring and exploration locations.

4.2.1 Monitoring of Pre-Existing Wells

PES monitored groundwater levels and quality in early 2017 to: (1) update the Site data set, (2) begin collecting seasonal elevation and groundwater quality data, and (3) monitor the effects of current groundwater extraction in nearby redevelopments.

4.2.1.1 Groundwater Level Monitoring

PES conducted three complete rounds of groundwater level monitoring that included wells from the Shallow, Intermediate A, Intermediate B, and Deep Zones at the Site. The events were conducted on March 20, March 24, and June 12, 2017, and included 22 shallow wells, 11 Intermediate A wells, 6 Intermediate B wells, and 12 deep wells (Table 5). In each well, depth to water below the top of the polyvinyl chloride ("PVC") or steel well casing was measured with an electronic water level probe.

Based on information obtained from the Seattle Department of Construction & Inspections web site (http://www.seattle.gov/dpd/toolsresources/Map/), PES identified several development projects located to the southeast of the Property that were undergoing redevelopment and would

be dewatering to facilitate construction. The properties include the two square blocks bounded by Valley Street to the north, Fairview Avenue to the east, Mercer Street to the south and Terry Avenue North to the west (Figure 5). The property addresses are 625 Boren Avenue North and 630 Boren Avenue North, hereafter referred to as 625/630 Boren Avenue North. According to the Groundwater Control Plan (Middour Consulting LLC, 2016), the 625/630 Boren Avenue North construction dewatering would extract groundwater at rates ranging from 580 to 750 gpm. PES instrumented nine monitoring wells (Table 5) with pressure transducers to monitor the effects of the groundwater extraction activities associated with the 625/630 Boren Avenue North development. PES installed the transducers between April 6 and April 10, 2017. Groundwater extraction associated with the redevelopment properties was initiated April 17, 2017, with additional dewatering wells activated after that date. To provide water levels to monitor drawdown in the early stages of groundwater extraction and to check the conditions of the flush-with-grade monitoring well completions containing the pressure transducers, PES measured depth to water in 13 wells on the Property and 18 wells off the Property weekly between April 14 and May 19 (Table 5). PES also measured depth to water in 51 monitoring wells across the Site on October 11, 2017.

Table 3 provides the groundwater elevation data measured with an electronic water level probe in previous investigations and in 2017. Appendix D presents hydrographs for groundwater elevations in selected wells and hydrographs of the data collected by the pressure transducers.

4.2.1.2 Groundwater Sampling

PES collected groundwater samples from 53 monitoring wells between March 20 and April 21, 2017, and between June 12 and 30, 2017. The sampled wells included 22 Shallow Zone wells, 17 Intermediate A and B Zone wells, and 14 Deep Zone wells (Table 5). PES monitored pH, specific conductance, temperature, dissolved oxygen ("DO"), and oxidation-reduction potential ("ORP"), with selected wells also monitored for turbidity.

PES submitted all groundwater samples to ESC Lab Sciences ("ESC") for analysis of VOCs. Samples from 10 wells near the northern part of the Property (where fuel was stored and distributed) were also submitted for GRO analysis, and groundwater samples from 31 wells located beneath and downgradient of the Property were also submitted for monitored natural attenuation ("MNA") parameter analysis (Table 5).

4.2.2 Geotechnical Investigation

Four temporary borings (B-201 through B-204) were drilled as part of a geotechnical investigation conducted at the Property in June 2017. Holocene Drilling of Puyallup, Washington, drilled the borings, and Terra Associates, Inc., oversaw the drilling and logged the borings. Terra tested six samples for grain size distribution. PES collected soil samples from each geotechnical boring and submitted them to ESC for analysis of VOCs. PES also submitted selected samples for analysis of GRO. Figure 6 shows the locations of the borings.

4.2.3 Environmental Investigations

Field work at and adjacent to the Property was conducted between August and December 2017 to fill data gaps at the Property (Table 4) and provide the data needed to design and implement

an interim action. The investigation included drilling and sampling soil and groundwater from temporary borings, installing and developing monitoring wells, and collecting groundwater samples from the new wells. Figure 6 shows the locations of the borings and monitoring wells, and Tables 4 and 5 summarize the purpose and monitoring scope of each boring and well. Following is a summary of the investigation.

4.2.3.1 Temporary Boring Drilling

Cascade Drilling ("Cascade") of Woodinville, Washington, drilled 35 borings (B-205 through B-238) to depths ranging from approximately 37 to 125 bgs (elevation 3 to -80 feet relative to NAVD 88; see Table 1) from August through December 2017. Borings B-205 through B-211 and B-216 through B-238 were drilled on the Property, and borings B-212 through B-215 were drilled in the street ROWs to the west and south of the Property. Borings B-205 through B-223 were drilled using a sonic drilling rig to allow continuous soil retrieval and logging. Periodic grab (reconnaissance) groundwater samples were also collected from these borings. Borings B-224 through B-238, which were drilled to confirm the extent of elevated PCE concentrations at two Property locations, were drilled using a hollow stem auger drilling rig.

Table 5 summarizes the soil and reconnaissance groundwater samples collected for laboratory analysis. These samples were submitted to ESC for analysis of VOCs, with selected samples also submitted for analysis of GRO (Table 5). Soil samples were collected from most borings for laboratory analysis of grain size, vertical hydraulic conductivity, dry bulk density, or f_{oc}. Physical analysis soil samples were selected to represent a variety of lithologies, various sample depths, and different locations on the Property. PES submitted 16 samples for analysis of grain size, 1 sample for analysis of vertical hydraulic conductivity, 1 sample for analysis of dry bulk density, and 4 samples for analysis of f_{oc} (Table 5).

PES projected that temporary borings B-205 through B-217 and B-219 would need to be advanced to the bottom of the Intermediate B Zone, to a depth of 80 to 95 feet bgs (an approximate elevation of -40 feet) for vertical delineation. Nine of the borings (B-205, B-206, B-208, B-209, B-210, B-212, B-215, B-216, and B-219) were drilled as planned to an approximate elevation of -40 feet. Based on field indications of potential contamination in or near the boring being drilled, five of the borings (B-207, B-211, B-213, B-214, and B-217) were drilled deeper than planned, to depths anticipated to be below potential contamination. Bottom depths in these borings ranged from 90 to 125 feet bgs (approximate elevations from -51 to -80 feet).

Sixteen borings (B-218, B-220 through B-233, and B-238) were added to help delineate the lateral and vertical extent of CVOCs detected in soil at MW-135. Boring depths ranged from 40 feet bgs at B-226, B-232, and B-238 (an approximate elevation of 0 feet) to 70 feet bgs at B-221 (an approximate elevation of -31 feet). Five additional borings (B-234 through B-237) were drilled to help delineate the lateral and vertical extent of CVOCs detected in soil at B-217. These boring depths ranged from 37 feet bgs at B-234 (an approximate elevation of 15 feet, beyond which the drilling rig could not be advanced) to 45.5 feet bgs at B-235, B-236, and B-237 (an approximate elevation of 6.5 feet).

The density and silt content of the soil in the Intermediate and Deep Zones caused the temporary wells installed in these units to yield little to no water. As a result, fewer reconnaissance groundwater samples were collected during drilling of the temporary borings than were planned.

4.2.3.2 Monitoring Well Installation and Development

Ten monitoring wells (MW-132 through MW-141) were drilled to depths ranging from 80 to 120 bgs (elevation -39 to -80 feet relative to NAVD 88; see Table 1) in August and September 2017 (Figure 7). Wells MW-132 through MW-137, MW-139, and MW-141 were drilled on the Property, and wells MW-138 and MW-140 were drilled in the street ROWs to the west and south of the Property. The monitoring well borings were drilled using a sonic drilling rig to allow continuous soil retrieval and logging. Periodic grab (reconnaissance) groundwater samples were also collected. All of the samples were submitted for analysis of VOCs, with selected samples also submitted for analysis of GRO. Soil samples were collected from most monitoring well borings for laboratory analysis of grain size, hydraulic conductivity, or $f_{oc.}$ As with the samples from the temporary borings, physical analysis soil samples were selected to represent a variety of lithologies, sample depths, and locations on the Property. PES submitted 8 samples for analysis of grain size, 2 samples for analysis of vertical hydraulic conductivity, 2 samples for analysis of dry bulk density, and 2 samples for analysis of f_{oc}. Table 5 summarizes the soil and reconnaissance groundwater samples collected for laboratory analysis.

PES projected that six monitoring wells (MW-132 and MW-134 through MW-138; see Figure 6) would need to be advanced to the bottom of the Intermediate Zone (to a depth of 80 to 95 feet bgs or an approximate elevation of -40 feet), with a well screened in each near the base of the Intermediate B Zone, and that two monitoring wells (MW-133 and MW-140) would need to be advanced to and completed at the base of the Deep Zone (to a depth of 120 to 130 feet bgs or an approximate elevation of -75 to -80 feet) for vertical delineation. Four of the wells (MW-132, MW-134, MW-135, and MW-136) were drilled as planned to an approximate elevation of -40 feet with a 10-foot-long well screen installed in each. Two of the planned Intermediate Zone wells (MW-137 and MW-138) were advanced into the Deep Zone to depths anticipated to be below potential contamination near the well locations (each to 115 feet bgs). Monitoring wells with 10-foot-long screens were installed at the bottom of each of these monitoring well borings. Two monitoring wells were added to help delineate the eastern extent of CVOCs detected in soil and groundwater at B-211 and MW-133: MW-139 (drilled at the original B-218 location) was drilled to an approximate depth of 80 feet bgs (an approximate elevation of -40 feet), and MW-141 was drilled to an approximate depth of 105 feet bgs (an approximate elevation of -65 feet), with 10-foot-long screens installed at the bottom of each of these monitoring well borings. The density and silt content of the soil in the Intermediate and Deep Zones caused the temporary wells installed in these units to yield little to no water. As a result, fewer reconnaissance groundwater samples were collected during drilling of the monitoring well borings than were planned.

Wells were developed before being monitored by repeated surging (with a surge block or bailer) and pumping until the color of the discharge water did not change with additional development.

4.2.3.3 Groundwater Monitoring and Sampling

PES conducted one round of groundwater level monitoring on October 11, 2017, which included the 10 monitoring wells installed in 2017 (MW-132 through MW-141), all accessible Property wells, and wells in the public ROW. In each well, depth to water below the top of the PVC or steel well casing was measured with an electronic water level probe. Table 3 presents the groundwater elevation data.

PES collected groundwater samples from the 10 monitoring wells installed in 2017 (MW-132 through MW-141). Samples were collected with a bladder pump between September 21 and 25, 2017. PES monitored pH, specific conductance, temperature, DO, and ORP, with selected wells also monitored for turbidity. PES submitted all groundwater samples for analysis of VOCs and selected samples also for GRO (Table 5).

4.2.3.4 Bench Treatability Testing

A bench treatability study was conducted by In-Situ Oxidative Technologies, Inc. ("ISOTEC") to provide data for design of the interim action. The objectives of the study were to evaluate whether soil characteristics at the Property would prevent modified Fenton's reagent ("MFR") from effectively treating PCE contaminated soil and to evaluate the relative effectiveness of two different MFR dose rates for treating CVOCs. The bench study used a bulk soil sample collected during installation of monitoring well MS-135 (a 1-gallon sample collected from the soil remaining in the sampler after the discrete sample at 46 feet bgs was collected) that contained a pre-testing concentration of PCE of 13.0 milligrams per kilogram ("mg/kg") after the bulk sample was homogenized in the laboratory.

ISOTEC set up one control reactor and two treatment reactors. One treatment reactor was dosed with a low-concentration of MFR (6 grams oxidant per kilogram of soil), and one was dosed with a relatively high concentration of MFR (24 g/kg). The MFR was injected into each treatment reactor without opening the container and was mixed thoroughly with the sample contents after each injection. The injections occurred in two stages, 24 hours apart, to increase treatment efficiency and minimize gas formation and the resulting pressure buildup. The two treatment reactors were quenched 24 hours after the second injection, and the treated soil (and the control soil) was sampled and submitted for analysis of VOCs and GRO. The study concluded that:

- There do not appear to be any soil characteristics that would prevent MFR from oxidizing PCE, and MFR should be an effective oxidizing agent for this project; and

- The low and high doses of the MFR provided generally the same level of treatment and consequently, the recommended application approach for MFR would be multiple low dose (rather than fewer high dose) injections.

4.2.3.5 Water Injection Testing

ISOTEC conducted brief injection tests in 10 monitoring wells on October 18, 2017, to assess the ability to inject treatment fluids into the water-bearing zones proposed for the interim action. ISOTEC used monitoring wells MW130, MW131, MW-132, MW-134, MW-135, MW-136,

MW-139, MW-141, W-MW-01, and W-MW-02 for the tests. At each well, an adapter was connected to the top of the PVC casing, and a small volume of potable water similar to the volume of water in slug testing, well development, or well rehabilitation was pumped into the well under pressure. Water pressure and volume were measured and recorded. Total flow into each well varied from 4 to 50 gallons, with injection pressures ranging from 12 to 100 psi. The water injection tests indicated that the lower portion of the Intermediate A Zone, the upper portion of the Intermediate B Zone, and the Deep Zone accepted greater volumes of injected water at moderate pressures. The results also indicated that injection into the lower portion of the Intermediate B Zone would be more difficult (PES, 2018).

4.2.3.6 Data Validation

PES reviewed the analytical reports to evaluate the laboratory's performance in meeting the quality control criteria outlined in the 2017 Environmental Protection Agency ("EPA") Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, and 2017 EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA, 2017a and 2017b). PES reviewed completeness, sample collection and preservation, holding times, initial and continuing calibration, method blank results, field and laboratory duplicate results, surrogate recoveries, laboratory control samples, matrix spike/matrix spike duplicates ("MS/MSD"), and quantitation limits. PES assigned the following data qualifiers, as needed:

- **J qualifier**: the result is an estimate based on laboratory quality control results or data quality review;
- **U qualifier**: the result is considered not detected at the concentration shown based on a review of the laboratory quality control results; and
- **R qualifier**: the result is rejected based on a review of laboratory data quality results.

Following is a summary of the reasons that some of the data were qualified:

- All laboratory qualifiers indicating detections between the laboratory method detection limits ("MDLs") and the associated laboratory reported detection limits ("RDLs," the laboratory's practical quantitation limits), which the laboratory indicated with a J qualifier, were accepted;
- Based on the lack of 2-chloroethyl vinyl ether recoveries for the MS/MSD, the non-detected 2-chloroethyl vinyl ether results in FMW-3D and MW111 were rejected (R);
- Some low-level detections of VOCs were qualified as non-detected (U) due to detections of those VOCs in the associated method blanks;
- A few detected VOCs were qualified as estimated (J) due to continuing calibration verification ("CCV") issues;
- Some non-detected VOCs were qualified as estimated (UJ) due to CCV issues; and
- Isolated non-detected VOC results were qualified as estimated due to slightly low or elevated laboratory control sample recoveries.

The usefulness of the data was determined based on the EPA guidelines. Based on the data quality review, PES judged all of the data, except for the data qualified with an R, acceptable for use in the interim action and RI. PES does not think that the rejected data will materially affect the evaluation of environmental conditions. A compact disc in Appendix E provides the analytical data reports and data validation review memoranda.

4.2.3.7 Well Surveying

In March, June, and October 2017, Bush, Roed & Hitchings, Inc. ("BRH"), surveyed the horizontal and vertical locations of monitoring wells not previously surveyed, selected additional Site wells, and selected Property features to ensure accuracy of the Site figures and aid in evaluation of the data. The horizontal datum was North American Datum of 1983/1991 ("NAD 83/91"), and the vertical datum was the NAVD 88.

4.3 2018 and Early 2019 Investigation Work

The following sections discuss the additional investigation work conducted in 2018 and groundwater sampling conducted through February 2019. These investigations were intended to support design and implementation of the interim action and were conducted both during and after preparation of the interim action work plan. Table 6 summarizes the activities, and Figure 6 shows the locations of the borings, monitoring wells, and injection wells sampled.

4.3.1 Temporary Boring Drilling

Cascade drilled and sampled 10 temporary borings (B-239 through B-248) between March 28 and May 11, 2018, with a hollow-stem auger drill rig equipped with nominal 4-inch inside diameter ("ID") augers. Cascade also drilled 21 temporary borings (B-249 through B-267, including two replacement borings, B-254A and B-255A) between October 15 and October 19, 2018, with a direct-push drilling rig or a sonic drilling rig, as necessary. The borings were drilled to provide additional data in the following areas:

- Vertical extent of CVOCs near sewer lines, sumps, and drains: B-239, B-240, B-241, B-242, B-243, and B-244;
- Horizontal and vertical extent of CVOCs east of the B-217 area: B-248;
- CVOC concentrations in an area with relatively less sampling coverage: B-247;
- CVOC concentrations in the southeast corner of the Property, where additional data would improve the model: B-245 and B-246; and
- CVOC concentrations in the depth range to be excavated around injection wells IW-54A and IW-54B: B-249 through B-267.

Twenty-one of the borings (B-249 through B-267, including two replacement borings, B-254A and B-255A) were drilled to less than 35 feet bgs (approximate elevations between 5 and 25 feet), eight of the borings (B-239 through B-245 and B-247) were drilled to 80 feet bgs (approximate elevations between -40 and -41 feet), one boring (B-246) was drilled to 100 feet bgs (an approximate elevation of -60 feet), and one boring (B-248) was drilled to 115 feet bgs (an approximate elevation of -63 feet). Soil samples were collected from each boring

approximately every 5 feet during drilling. Samples were submitted for laboratory VOC analysis. Appendix B provides the boring logs not already provided in the Interim Action Work Plan (B-249 through B-267).

4.3.2 Well Installation and Development

Following is a summary of the injection well and performance monitoring well installation. Table 1 provides the well completion information, and Figure 10 shows the performance monitoring well locations and the injection wells sampled during the 2018 investigation. Section 11.2.4 provides a complete and detailed discussion of the entire injection well network, including how locations were selected.

4.3.2.1 Injection Wells

Between February 5 and April 20, 2018, 133 injection wells were installed on the Property. An additional 24 injection wells were installed on the Property between August 29 and October 18, 2018. The injection wells were installed as part of the current interim action (see Section 5.2) in portions of the Property where PCE concentrations in soil exceeded 0.5 mg/kg. A hollow-stem auger drill rig equipped with nominal 4-inch ID augers drilled and completed 133 injection wells, and a sonic rig equipped with nominal 6-inch casing drilled and completed 24 injection wells. Each well was constructed with nominal 2-inch ID Schedule 40 PVC. All of the injection wells were constructed with 15-foot-long 0.020-inch slotted screens, except for 19 wells completed in the shallowest treatment zone (Treatment Zone A). These 19 wells (IW-3A through IW-5A, IW-9A, IW-10A, IW-17A through IW-20A, IW-40A through IW-42A, IW-45A, and IW-50A through IW-55A) were completed with 20-foot-long screens (from elevation 10 feet to -10 feet). For some of the deeper injection wells, the annular seal consisted of at least 10 feet of bentonite pellets followed by Portland cement grout admixed with a clay stabilizer with concrete near the top of the borehole. The top of each well casing consisted of blank 2-inch PVC pipe completed to allow connection of an injection wellhead assembly. Cascade installed a flush-with-grade nominal 8-inch diameter steel traffic box set in concrete over each well.

Soil samples were collected for lithologic logging and laboratory analysis from 31 injection well borings, including IW-1C through IW-3C, IW-7A, IW-8B, IW-8C, IW-11D through IW-16D, IW-19B, IW-21B, IW-22C through IW-24C, IW-27B, IW-27C, IW-28C, IW-39B, IW-46B through IW-48B, IW-50A, IW-51A, IW-53B through IW-55B, IW-54A, and IW-58A. Figure 6 shows the approximate locations of these 31 injection wells. Soil samples were collected from these borings to provide additional CVOC data in the following areas:

- Near sewer lines: IW-1C, IW-2C, IW-7A, IW-21B, and IW-27B;
- Near the MW-135 and B-217 areas: IW-3C, IW-8B, IW-8C, IW-11D, IW-12D, IW-13D, IW-15D, IW-22C, IW-27C, IW-28C, IW-46B, IW-47B, IW-48B, IW-50A, IW-51A, IW-53B, and IW-55B;
- Near and downgradient of the MW130 area: IW-14D, IW-16D, IW-19B, IW-23C, IW-24C, IW-54A, IW-54B, and IW-58A; and
- In areas with relatively less sampling coverage: IW-39B.

Soil samples from these 31 injection well borings were collected every 5 or 10 feet of drilling, logged and field screened, and submitted for VOC analysis. Due to the well's proximity to the former pump island and UST basin, soil samples from IW-7A were also submitted for analysis of GRO.

4.3.2.2 Performance Monitoring Wells

Twenty performance monitoring wells were installed between March 9 and May 10, 2018, with four wells (MW-149 through MW-152) located on the Property, eight wells (MW-142 through MW-145 and MW-156 through MW-159) located in the sidewalk on the east side of 8th Avenue North, two wells (MW-160 and MW-161) located in the sidewalk on the west side of 8th Avenue North, and six wells (MW-146 through MW-148 and MW-153 through MW-155) located in the sidewalk on the south side of Roy Street (see Figure 10). In the MW-158 monitoring well boring, an impenetrable obstruction was encountered at a depth of 34 feet, so an adjacent boring was drilled, and monitoring well MW-158A was installed in that boring. Three of the wells were installed in the Shallow Zone, six wells in the Intermediate A Zone, seven wells in the Intermediate B Zone, and four wells in the Deep Zone.

The performance monitoring well borings were drilled with a hollow-stem auger drill rig equipped with nominal 4-inch ID augers and completed with nominal 2-inch ID Schedule 40 PVC wells. Each monitoring well was constructed with a 10-foot long 0.020-inch slotted screen, silica sand in annulus around the well screen, bentonite (3/8-inch diameter pellets, chips, and/or grout) in the annuls above the filter pack, concrete near the top of the borehole, and a flush-with-grade steel traffic box set in concrete.

Soil samples were collected for lithologic logging and laboratory analysis from eleven of the performance monitoring well boring locations: MW-142, MW-143, MW-145, MW-147, MW-148, MW-152, MW-153, MW-158/158A, MW-159, MW-160, and MW-161. Samples were collected for lithologic logging every 5 feet of drilling, with samples submitted for laboratory analysis of VOCs every 10 feet of drilling. Due to the location of MW-158/158A across the street from the former pump island and UST basin, soil samples from those borings were also analyzed for GRO.

4.3.2.3 Additional Deep Monitoring Well Installation

Three additional monitoring wells (MW-162, MW-163, and MW-164) were installed in January 2019 in the upper portion of the Deep Zone near locations with elevated Treatment Zone D soil and/or groundwater CVOC concentrations (Figure 6). The wells were installed to provide additional soil and groundwater data in the depth range immediately below the lowest treatment zone (Treatment Zone D, elevation -40 to -55 feet). The wells were drilled to depths of approximately 110 feet bgs (approximate elevation of -70 feet). The upper 90 feet of each boring was drilled with 8-inch-diameter casing, and after installing and hydrating a bentonite plug in the bottom 5 feet of the 8-inch-diameter casing, the bottom 20 feet of each boring was drilled with 6-inch-diameter casing. Soil samples were collected for laboratory VOC analysis every 5 feet from 80 to 110 feet bgs, with four to five additional samples collected from MW-162 and MW-163 based on field screening results using a PID. The wells consisted of nominal 2-inch-diameter PVC, with the bottom 10 feet consisting of 0.020-inch slotted PVC well

screen and the upper 100 feet consisting of blank PVC casing. A sand pack was placed in the annular space around each well screen, with bentonite chips placed above the sand pack to approximately 2 to 3 feet bgs. A steel surface monument set in concrete was placed at the top of each well. Appendix B provides the logs for MW-162, MW-163, and MW-164. The January 2019 groundwater sampling event (Section 4.3.3.2) included monitoring wells MW-162, MW-163, and MW-164.

4.3.2.4 Well Development

Wells were developed before use by repeated surging (with a surge block or bailer) and pumping until the color of the discharge water did not change with additional development. Approximately two to three times the amount of water added to each boring during drilling was pumped from the wells during development.

4.3.3 Interim Action Groundwater Sampling

4.3.3.1 Baseline Groundwater Sampling

Groundwater samples were collected from 77 monitoring wells and 40 injection wells during the baseline sampling event (Table 6). The baseline sampling event included all performance monitoring wells and all accessible Site-wide wells. Five wells planned to be sampled (FMW-3D, FMW-129, FMW-131, GEI-1, and GEI-2) could not be sampled due to lack of property access. Injection wells were added to the baseline sampling event to provide a vertical profile of CVOCs in groundwater in and near apparent contamination hot spots (e.g., IW-15C and IW-6D, paired with MW-151 and MW-152), and in areas that may benefit from additional sampling coverage (e.g., IW-48A and IW-51B). Injection wells sampled during the baseline sampling event included wells in each of the four interim action treatment zones (PES, 2018).

All groundwater samples were collected between March 28 and May 21, 2018, and were submitted for laboratory analysis of VOCs and/or GRO (Table 6).

4.3.3.2 Groundwater Sampling Between Injection Events

Groundwater samples were collected between ISCO injection events in October 2018 (17 monitoring wells sampled between October 25 and 29) and December 2018 (18 monitoring wells sampled between December 12 and 17) to monitor the effects of the injections. Groundwater samples were collected from 57 monitoring wells after the third ISCO injection event (primarily between January 21 and February 1, 2019) to document the conditions prior to the injection of EVO. Table 6 summarizes the wells sampled. All samples were analyzed for VOCs, with select samples analyzed for GRO and/or geochemical parameters used to evaluate biodegradation (Table 6).

4.3.4 Data Validation

As in the 2017 investigation, PES reviewed the analytical reports to evaluate the laboratory's performance in meeting the quality control criteria outlined in EPA guidelines (2017a and 2017b), using the same data qualifiers as necessary.

Following is a summary of the reasons that some of the data were qualified:

- All laboratory qualifiers indicating detections between the laboratory MDL and the associated laboratory RDL, which the laboratory indicated with a J qualifier, were accepted;
- For batches with CCVs with percent differences outside of laboratory acceptance criteria, the results for the associated compounds are estimates and were qualified (J or UJ);
- Results for compounds associated with spike recoveries outside of laboratory control limits are estimates and were qualified (J or UJ);
- Based on low spike recoveries, the results for n-butylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, naphthalene, styrene, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene in an IW-21B soil sample (collected at 67 feet bgs) were rejected (R qualifier). Similarly, the carbon disulfide and n-hexane results in an IW-3C soil sample were rejected (R qualifier) due to low spike recoveries;
- When surrogate recoveries for select analytical batches were recovered outside of laboratory control limit criteria, results in associated samples are estimates and were qualified (J or UJ). Surrogate recovery for a few select analytical batches were recovered slightly below the laboratory control limit criteria, so results in the associated samples are estimates and were qualified with the potential for low bias (J- or UJ-). Similarly, results for batches with surrogate recoveries above the laboratory control limit criteria are estimates and were qualified with the potential for high bias (J+);
- Poor precision for isolated compounds associated with field duplicates are estimates and were qualified (J);
- Some low-level detections of compounds were qualified as non-detected (U) due to detections of those compounds in the associated method blanks or trip blanks;
- Due to an elevated detection of cis-1,2-dichloroethene (“cDCE”) in a trip blank, associated sample results for cDCE between the RDL and 10 times the blank concentration are estimates and were qualified with the potential for high bias (J+);
- Results exceeding the method upper calibration limits are estimates and were qualified (J);
- Samples received by the laboratory outside of the recommended temperature preservation of 6°C were qualified (J or UJ); and
- MW109-040618 was run at a high dilution due to potential PCE carryover from the previous sample (MW108-040618). PCE was reported as a non-detect (U), but it could not be reported at a lower dilution due to high levels of target compounds. Since the laboratory indicated a potential for PCE carryover, the PCE result for MW109-040618 is an estimate and was qualified (UJ).

Based on the data quality review, PES judged all of the data, except for the data qualified with an R, acceptable for use in the interim action. PES does not think that the rejected data will

materially affect the evaluation of environmental conditions. A compact disc in Appendix E provides the analytical data reports and data validation review memoranda.

4.3.5 Well Surveying

In May and October 2018, BRH surveyed the horizontal and vertical locations of the monitoring wells and injection wells drilled in 2018 using the horizontal datum (NAD 83/91) and the vertical datum (NAVD 88) previously used at the Site. The temporary soil borings drilled in March, April, and May 2018 were also surveyed. Due to the construction activities in the 8th Avenue right of way, MW-161 has yet to be surveyed.

5.0 INDEPENDENT AND INTERIM ACTIONS

5.1 Previous Independent Actions

5.1.1 UST Closure

Four 6,000-gallon USTs (Tanks 1 through 4) associated with the former laundry boiler system and a fifth 500- to 600-gallon UST (Tank 5) were removed from the Property by SES on March 22, 2013 (SES, 2013a; Figure 2). Droplets of liquid mercury were found when the concrete foundation near Tank 2 was removed; the mercury, which SES speculated to be from a broken gauge, was contained and disposed of as hazardous waste at a regulated facility. A limited amount of petroleum-contaminated soil was observed in the vicinity of Tanks 1 and 4. It was thought that this soil was a result of tank overfill. Tanks 1 through 5 contained no measurable product and were cleaned by Marine Vacuum Services, Inc., prior to disposal at Seattle Iron and Metal in Seattle. Tanks 1 through 4 each measured approximately 28 feet long by 6 feet in diameter, were constructed of single-walled steel, and appeared to be in good condition, with no visible perforations or rust. Tank 5 measured approximately 10 feet long by 3 feet in diameter, was constructed of single-walled steel (though a lighter gauge than Tanks 1 through 4), and appeared to be in poor condition, with numerous perforations. Based on visual, olfactory, and analytical methods, the contents of Tanks 1 through 4 were thought to be Bunker C fuel oil, and the contents of Tank 5 were thought to be water.

Soil samples were collected from the sidewalls and bottom of each UST excavation and were submitted for laboratory analysis of diesel-range organics ("DRO") and oil-range organics ("ORO"); the soil samples collected from the bottom of the Tank 2 excavation were also submitted for analysis of Resource Conservation Recovery Act ("RCRA") 8 metals. Based on the low concentrations of the analyzed constituents and limited amount of soil with visible petroleum impacts, SES reported that the soil near the tanks was protective of human health and the environment (SES, 2013a). No correspondence from Ecology concurring with this conclusion is available.

5.1.2 Electrical Resistance Heating and Soil Vapor Extraction

Between April and December 2013, an electrical resistance heating/soil vapor extraction ("ERH/SVE") system was designed, installed, and operated by SES to clean up high concentrations of CVOCs in soil and groundwater beneath the Property (SES, 2015 and 2016). The objective of using the ERH/SVE system was to reduce PCE concentrations to below 14 mg/kg in vadose zone soil (at an approximate elevation of 30 to 40 feet) and to below 5,000 micrograms per liter ("µg/L") in groundwater within the upper 30 feet of the saturated zone (at an approximate elevation of 0 to 30 feet). The soil cleanup goal was selected to allow for disposal of excavated soil at a non-hazardous, Subtitle D landfill. The groundwater target concentration of 5,000 µg/L was used as it was believed that reducing PCE concentrations to below 5,000 µg/L would facilitate subsequent treatment of this saturated zone using *in situ* enhanced reductive dechlorination ("ERD"). The ERH/SVE system was also implemented to improve groundwater quality beneath the Site by reducing soil and groundwater CVOC concentrations beneath the Property.

5.1.2.1 System Installation and Operation

The ERH/SVE system included 165 heating electrodes and 16 temperature monitoring points covering approximately 37,943 square feet of the Property (Figure 8). The Schedule 40 steel electrodes were installed in borings drilled to an elevation of 0 feet (approximately 40 feet below the current grade level and approximately 30 feet into saturated soil). With the base of the electrodes at an elevation of 0 feet, the Shallow Zone and upper half of the Intermediate A Zone were treated by the system. The Schedule 80 temperature monitoring points were installed to monitor subsurface temperatures in the treatment area. Pipes conveyed soil vapor recovered by vacuum from the electrodes to a treatment system consisting of a power control unit, condenser, two SVE blowers, and granular-activated carbon units that treated condensate and vapor generated by the ERH/SVE system (SES, 2015 and 2016).

Between May 10 and June 4, 2013, nine shallow monitoring wells (F5, F9, F13, G12, J5, J15, K8, M15, and N7) were installed in the ERH/SVE treatment area prior to starting the system. The wells were drilled to an approximate elevation of 0 feet (40 to 50 feet bgs, depending on Property location) and were completed with 1-inch-diameter stainless steel screens (between approximate elevations of 0 to 30 feet) with 0.010-inch wide slots, stainless steel blank risers, 10-20 silica sand annular backfill around the screens, and 8 feet of neat cement grout above the silica sand. SES developed the wells by surging and pumping them a minimum of five well volumes and/or until the groundwater no longer appeared turbid.

5.1.2.2 System Performance

SES operated the ERH/SVE system from August to December 2013, removing an estimated 12,000 pounds of CVOCs from the treatment area (SES, 2015 and 2016). Based on the system monitoring data, SES determined that the removal rate had reached an asymptotic state by November 2013, and that approximately 98 percent of the original CVOC mass had been removed from the treatment area. SES determined that other treatment technologies would be more effective at that point and, after running the system for an additional 40 days, shut the ERH/SVE system down in December 2013.

After letting the soil cool down, SES drilled five direct-push borings (P02 to P06) in February 2014 near borings GMW-1 and B-9. Vadose zone soil samples (collected from an elevation between 40 and 30 feet or from 0 to 10 feet bgs) from the borings were analyzed for PCE-related CVOCs by EPA Method 8260C. All sample results were below the treatment goal of 14 mg/kg.

Groundwater samples were collected using low-flow sampling techniques from monitoring wells (F5, F9, F13, G12, J5, J15, K8, M15, and N7) in July, October, November, and December 2013, in March 2014, in June and October 2015, and in February 2016. Lack of water in some wells limited sampling during operation of the ERH/SVE system. Samples were analyzed for PCE, trichloroethene (“TCE”), cDCE, trans-1,2-dichloroethene (“tDCE”), and vinyl chloride (“VC”) by EPA Method 8260C. Concentrations of PCE-related CVOCs decreased approximately 2 to 3 orders of magnitude due to operation of the ERH/SVE system.

5.1.3 Enhanced Reductive Dechlorination

Pilot testing was conducted in the Shallow and Intermediate Zones to evaluate the use of ERD as a cleanup technology to degrade the PCE-related CVOCs remaining at the Property post-operation of the ERH/SVE system (SES, 2016). The objectives of the pilot tests were to determine whether bioamendments would be effective in furthering ERD at the Property, to determine whether adequate injection and distribution of the amendments could be achieved, and to develop the basis for full-scale design. Locations on the south and east boundaries of the Property were selected to test the potential of the technology for use as a biobarrier and due to the proximity of monitoring wells. Two phases of pilot testing were conducted: a preliminary pilot test consisting of injection in one temporary well (IW-01) installed in the Intermediate A Zone in November 2015, and a full pilot test consisting of injection in five temporary Intermediate A Zone wells (IW-02 through IW-06) and 24 Shallow (40-foot-deep) Zone ERH probes (C14, D13, D14, E14, F15, G15, H16, J16, K17, L17, M18, N17, N18, P7, P16, P17, R8, R16, S9 through S13, and S15) in January 2016 (Figure 8).

The intermediate injection points were installed using a sonic drill rig. Each injection point consisted of a temporary 2-inch-diameter well completed as follows: a stainless-steel wire wrap screen was set in the open borehole from 50 to 65 feet bgs, followed by a 3-foot blank casing section to 47 feet bgs, a 5-foot-long inflatable packer from approximately 42 to 47 feet bgs, and blank casing to just above the ground surface. Since the ground surface elevation at IW-05 and IW-06 was 10 feet higher than the other injection locations, those temporary injection wells were drilled and installed approximately 10 feet deeper than the depths described for IW-01 through IW-04. Before amendment injection, each packer was inflated to a pressure of 300 pounds per square inch ("psi"), sealing off the target injection zone from the upper zone.

A carbohydrate substrate (food-grade dextrose) was injected in the shallow pilot test points; it was selected for use in the shallow points due to shallow groundwater zone characteristics, faster metabolic reaction times, and the project timeline. Low pressure (less than 15 psi) injections were used in the shallow points to prevent short circuiting. A total of 43,590 gallons of dextrose solution was injected in the shallow points, at an average dextrose dose rate of 4.2 percent.

A biodegradable soybean oil, EDS-ER by Tersus Environmental, was injected in the temporary intermediate pilot test wells. A total of 65,744 gallons of the solution was injected, with average EDS-ER doses ranging from 2.9 to 4.1 percent, average wellhead pressures varying from 34.4 to 60.5 psi, and average flow rates ranging from 7 to 20 gpm.

Data collected during pilot testing indicated a radial distribution of the injected solutions, relatively little movement of the injected solutions out of the unit in which they were injected, an adequate radius of influence, significant increases in total organic carbon ("TOC") concentrations in nearby monitoring wells, and significant decreases in PCE and TCE concentrations over the relatively short timeframe of the pilot test. Based on the monitoring results in nearby wells during and shortly after the injection events, SES concluded that the injected substrates were effectively distributed and were impacting the injection zones to promote ERD, including increasing TOC, decreasing DO and ORP, and generally decreasing concentrations of PCE-related CVOCs (SES, 2016). Over a year after the pilot tests, significant decreases (typically two or more orders of magnitude) in CVOCs were observed in monitoring

wells adjacent to the Property (MW107 and W-MW-02) without increases in vinyl chloride in wells downgradient of the Property (e.g., MW108, MW109, and MW110).

5.2 Interim Action

BMRD is conducting an interim action at the Property consistent with the Ecology approved IAWP (PES, 2018). This section provides an overview of the interim action and summarizes the status of the work completed and included in this work plan.

5.2.1 Interim Action Overview

The interim action will reduce the mass of contamination that remains on the Property through a combination of (1) removal (through excavation) and (2) *in situ* treatment of contaminants in the saturated soil and groundwater beneath the excavation. The excavation will be completed as part of the planned building construction and will remove unsaturated and saturated soil to an elevation of 10.7 feet (approximately 29 to 39 feet bgs, depending on the location on the Property). An additional 0.5 to 9.5 feet of soil will be excavated from portions of the Property (down to elevations ranging from 1.6 feet to 10.6 feet) to facilitate construction of thickened portions of the foundation. Additional contaminant mass will be removed from groundwater that is extracted during the dewatering that will be conducted to facilitate soil excavation.

The use of *in situ* treatment beneath the development excavation will address contamination in the lower portion of the Intermediate A Zone, the Intermediate B Zone, and the upper portion of the Deep Zone (see Section 6.2.1 below). The *in situ* technologies selected for the interim action include (1) *in situ* chemical oxidation ("ISCO") using modified Fenton's Reagent ("MFR") as the oxidant, and (2) ERD using emulsified vegetable oil ("EVO") as the carbon substrate. These technologies are being implemented in a phased approach as follows:

- Conduct three applications of ISCO using MFR to significantly reduce the mass of contamination (the first round of ISCO injections was completed on October 3, 2018); and
- After the final MFR injection has had time to fully react, inject EVO and bioaugmentation cultures into the subsurface.

Control of contaminant migration from the Property will be accomplished by providing additional treatment through a perimeter *in situ* treatment system utilizing a series of up to 100 injection wells installed at 50 locations along 8th Avenue North and Roy Street on the downgradient perimeter of the Property.

Migration of contaminants into the proposed redevelopment structures will be prevented by installing a single membrane system that combines waterproofing and a contaminant vapor protection beneath and up the sides of the building. The waterproofing and vapor barrier system will prevent the migration of contaminated groundwater and/or contaminant vapors into the occupied portions of the buildings.

The final objective of the interim action, providing for continued treatment of residual source area contamination beneath the building, will be accomplished through the installation of

injection and monitoring well networks through the bottom of the parking garage basement. If needed, the network will be used to inject EVO beneath the building.

5.2.2 Interim Action Status

As of the end of March 2019, interim action activities that have been completed include the following:

1. Investigations on and near the Property to support design of the injection well network (see Section 4.2 and 4.3).
2. Installation and development of 157 injection wells on the Property (see Section 4.3.2.1).
3. Installation and development of 20 performance monitoring wells (see Section 4.3.2.2).
4. Injection of three rounds of ISCO into the on-Property injection wells, with the first round conducted between September 13 and October 3, 2018, the second round conducted between November 5 and December 1, 2018, and the third round conducted between December 18, 2018, and January 20, 2019.
5. Injection of one round of EVO into the on-Property injection wells between February 12 and March 3, 2019.
6. Groundwater monitoring events at the beginning of the 2017 field investigations (see Section 4.2.1.2), prior to the first ISCO injection event in the second quarter of 2018 (see Section 4.3.3.1), between ISCO injection events in October 2018 and December 2018 (see Section 4.3.3.2), and after the third ISCO injection event (primarily between January 21 and February 1, 2019; see Section 4.3.3.2).
7. A Site-wide groundwater level monitoring event on March 14, 2019. The pressure transducers in Shallow Zone well R-MW3, Intermediate A Zone wells MW116 and MW119, Intermediate B Zone well MW130, and Deep Zone wells FMW-129, MW102, MW105, MW113, and MW122 were removed from the wells during this event.
8. Initial well decommissioning activities of all wells on the Property, including monitoring wells, injection wells, and ERH/SVE wells, the latter per an Ecology variance (Ecology, 2018b).
9. Installation and development of most of the perimeter injection wells along the west side of the 8th Avenue North ROW and north side of the Roy Street ROW.

Interim action activities in progress include shoring installation and initial soil excavation. Future interim action work will include installation of the remaining perimeter injection wells, quarterly performance monitoring, dewatering, continued soil excavation, contingent action well installation, EVO injection in the perimeter injection wells, and monitoring and potential injection in the contingent action wells.

This RI/FS work plan presents the soil and groundwater data from the investigations conducted through 2018, the installation and sampling of selected Property injection wells, the installation

and sampling of the performance monitoring wells, and groundwater sampling through February 2019. Other future submittals will present the data generated during installation of the perimeter monitoring wells and future performance monitoring of the interim action.

6.0 SUMMARY OF SITE CONDITIONS

This section presents a summary of the investigation results discussed in Section 5.2.2, including the geology, hydrogeology, and nature and extent of contamination. The Draft RI Report (SES, 2013b), Draft Cleanup Action Plan (SES, 2015), Draft Interim Action Work Plan (SES, 2016), and Final Interim Action Work Plan (PES, 2018) presented the details of the information summarized in this section. Additional data are being collected during installation and development of interim action perimeter injection wells, periodic performance monitoring, and monitoring of the contingent action wells. These data will be included with the existing data set presented in this work plan and the data generated in the RI to characterize and evaluate the nature and extent of contamination at the Site.

6.1 Site Geology

Based on the investigations conducted at the Site, the subsurface lithology consists predominantly of silty sand, with lesser units of silt, sandy silt, sand, and silty gravel. Minor amounts of gravel are found in many of the silty sand and sand units. Densities of the deposits range from loose near the surface to very dense at depth. Dense to very dense soil was typically encountered in the borings at depths greater than 30 to 40 feet bgs, although at some locations (e.g., MW112, MW114, and MW117) dense to very dense soil was encountered as shallow as 10 feet bgs. These lithologies comprise the following stratigraphic units (from youngest to oldest): anthropogenic fill, post-glacial lacustrine deposits, glacial till or ice-contact deposits of the most recent glacial advance (Vashon Stade of the Frasier Glaciation), and Vashon or pre-Vashon glacial (outwash or drift) or inter-glacial deposits. The thickness of the fill is greatest to the east, near the southern end of Lake Union.

Figures 9 through 17 present cross sections along roughly east-west and north-south transects across the Site. Figures 6 and 7 show the cross section locations. The cross sections were located to allow the presentation of subsurface conditions roughly along groundwater flow paths through the Property and along transects roughly perpendicular to groundwater flow. To create the cross sections, the thickness and Unified Soil Classification Symbols for each lithology shown on the available boring logs, as well as the horizontal and vertical coordinates of the boring locations, were entered into a subsurface visualization software package (Earth Volumetric Studio by C Tech). Earth Volumetric Studio created a 3-dimensional model (the "Studio model") of the subsurface lithology using a kriging algorithm. Once the model was created, PES cut cross sectional slices (A-A' through I-I') through the block model near as many deeper borings as possible. For presentation purposes, PES grouped lithologies that may be expected to behave similarly with respect to groundwater flow and contaminant transport. Thus, cleaner sand and gravel units were combined, silty sand and silty gravel units were combined, and predominantly fine-grained units (sandy silt, silt, and clay) were combined.

As seen on the cross sections, most of the surface soil at the Site is anthropogenic fill, with the areas shown without fill due to a lack of subsurface data (e.g., the south end of cross section B-B') or a lack of soil sampling (e.g., the top of MW106). Under most of the Site, 70 to 80 feet of interbedded silty sand, sandy silt, and silt underlie the fill, with occasional interbedded sand. Silty sand predominates in this zone, especially in the upper portion of this unit beneath the Property and to the southeast of the Property, but in the area around MW128, the interbedded

unit is thin. Beneath the interbedded zone lies a coarser unit consisting primarily of sand with silty sand interbeds, with the thickest accumulations south of the Property and in the area around MW128. Although the Studio model shows finer material (silty sand to predominantly silty soil) beneath the sand, only a few locations (e.g., MW105 and MW-133) were drilled deep enough to encounter this unit.

6.2 Site Hydrogeology

6.2.1 Hydrostratigraphy

The Site hydrostratigraphy is comprised of discontinuous water-bearing zones in the glacial or ice-contact deposits, extending from the water table to the top of the outwash deposits, with a deeper water-bearing zone in the outwash deposits. The Shallow Zone is an unconfined water-bearing zone in the fill, lacustrine deposits, and upper portion of the glacial till/ice-contact deposits (corresponding to the fill and less dense upper portion of the interbedded unit shown on the cross sections). The Intermediate A and B Zones are dense to very dense, semi-confined to confined water-bearing zones in the glacial till/ice-contact deposits, which as a whole serves as a leaky aquitard (corresponding to the interbedded unit shown on the cross sections). The Intermediate Zone is further divided into an upper coarser zone (termed the Intermediate A Zone) and a lower finer zone (termed the Intermediate B Zone). The Deep Zone is a deeper, very dense, confined water-bearing zone in the outwash deposits (corresponding to the coarser unit shown on the cross sections). There is also a lower aquitard consisting of very hard, fine-grained glacial drift (corresponding to the few locations shown below the coarse deposits). The approximate locations of the Shallow, Intermediate A and B, and Deep Zones are shown on the cross sections.

6.2.2 Groundwater Elevations

Table 3 summarizes the groundwater levels measured in monitoring wells at the Site to date, including top of casing elevation (if known), depth to water, and groundwater elevation. Although the earliest reported water levels were measured in the early 1990s in wells outside the Property, more comprehensive Site-wide water level monitoring rounds have been conducted between 2012 and 2019. Factors affecting groundwater elevations include seasonal variability, operation of the ERH/SVE system at the Property between August and December 2013, operation of a dewatering system at the 601 Westlake Avenue North property between November 8, 2013, and December 15, 2014, and operation of a dewatering system at the 630 Westlake Avenue North property between April 17 and December 18, 2017. In presumed non-pumping periods between 2012 and 2017, depth to groundwater varied from 2.2 feet bgs in J5 (March 20, 2017) to 42.5 feet bgs in MW112 (December 21, 2012), and groundwater elevations (relative to NAVD 88) ranged from 10.97 feet in MW102 and MW106 (February 1, 2016) to 39.1 feet in R-MW5 (March 20, 2017). Operation of the ERH/SVE system locally volatilized groundwater in the depth range treated, resulting in some of the Property monitoring wells in the depth range treated (0 to 40 feet bgs) going dry during the period that the system was operational (SES, 2015). Operation of the 601 Westlake Avenue North dewatering wells lowered the intermediate and deep groundwater elevations from 5 to 8 feet during and shortly after the period of pumping (SES, 2015).

During the groundwater level events conducted by PES in March and early April 2017 (when no cleanup or dewatering activities were known to be occurring), depth to groundwater varied from 2.2 feet bgs in J5 to 41.5 feet bgs in MW124, and groundwater elevations (relative to NAVD 88) ranged from 14.7 feet in MW124 to 39.1 feet in R-MW5. Based on the historical data, groundwater elevations (in general) were highest in the shallower monitoring wells and lowest in deeper monitoring wells. Groundwater levels and elevations from March 14, 2019, were similar to those collected in March 2017, with groundwater elevations generally highest in the Shallow Zone monitoring wells and lowest in the Deep Zone monitoring wells (indicating a downward gradient). Depth to groundwater varied from 3.2 feet bgs in MW-149 to 39.8 feet bgs in MW-138, and groundwater elevations (relative to NAVD 88) ranged from 16.9 feet in MW-145 to 38.9 feet in R-MW5.

After groundwater extraction began on the two redevelopment properties located to the southeast of the Property in April 2017 (see Section 2.3.5), groundwater elevations in the monitored wells at the Site decreased significantly. Through the last groundwater monitoring event during pumping (October 11, 2017), decreases in groundwater elevation from the pre-pumping elevation at any individual well ranged from 8.02 (R-MW5) to 13.90 feet (F13) in the Shallow Zone, from 10.44 (MW131) to 22.03 feet (MW119) in the Intermediate A water-bearing zone, from 3.04 (MW130) to 16.92 feet (MW111) in the Intermediate B water-bearing zone, and from 2.41 (MW124) to 20.38 feet (MW128) in the deep water bearing zone. A portion of the groundwater elevation decreases may have been due to seasonal water level changes (e.g., at MW102, MW112, MW124, and MW130, which are located on the western edge of the Site), but, as seen in the hydrographs in Appendix D, it appears that the majority of the groundwater elevation decreases observed were due to groundwater extraction activities on the redevelopment properties to the southeast.

Appendix D provides hydrographs presenting the pressure transducer data from the nine instrumented wells (see Sections 4.2.1 and 5.2.1), which were operational between April 2017 and March 2019. The FMW-129 transducer stopped collecting data on June 27, 2017, and the MW130 transducer was removed from the well on September 14, 2018, due to interim action activities on the Property. As seen on the hydrographs, drawdown in the instrumented wells increased until mid-summer of 2017, peaking in most wells on July 14, 2017, prior to an 80 gpm reduction in the groundwater withdrawal rate in the 630 Westlake Avenue North extraction wells. The maximum drawdowns ranged from 4.91 feet in MW102 (farthest from the extraction wells) to over 20 feet in MW113 and MW119 (closest to the extraction wells).

Table 7 summarizes the pressure transducer data between March 13, 2018, and March 13, 2019, a period where no known construction-related groundwater withdrawals occurred in the South Lake Union Area. Summary statistics for FMW-129 and MW130 are not included in Table 7 since the pressure transducers in these wells were not operational during most of this period. The pressure transducer data during this period document the seasonal variability in groundwater elevations, with the highest seasonal groundwater elevation range in Shallow Zone well R-MW3 (9.36 feet) and the lowest seasonal groundwater elevation range in Deep Zone well MW105 (1.89 feet). Between March 2018 and March 2019, the highest groundwater elevations occurred in the spring and the lowest groundwater elevations occurred in the late summer and early fall.

6.2.3 Groundwater Flow Direction

Figure 18 presents groundwater contour maps for the Shallow, Intermediate A, and Deep Zones using groundwater levels measured on March 24, 2017. Consistent with groundwater contour maps generated using groundwater levels from the limited number of historical groundwater monitoring events, the groundwater flow direction in the Shallow and Intermediate A Zones was to the east on March 24, 2017. However, the groundwater flow direction in the Deep Zone on March 24, 2017, was westward to the west of 9th Avenue North (opposite the historical groundwater flow direction) and eastward to the east of 9th Avenue North. Groundwater levels measured on March 20 and April 14, 2017, also indicated a westerly groundwater flow direction in the Deep Zone. PES confirmed water level stability in each well as they were measured, and the consistency of the flow direction in the Deep Zone over three measurement events indicates that the measurements are trustworthy. PES is not aware of any activities near the Site that would cause a groundwater flow direction reversal in the western part of the Site. Based on the groundwater contour maps generated using the March 24, 2017, data, the horizontal hydraulic gradient varied from approximately 0.031 to 0.050 feet/foot in the Shallow Zone, from 0.029 to 0.063 feet/foot in the Intermediate A Zone, and from 0.006 to 0.008 feet/foot in the Deep Zone.

Figure 18 also provides a groundwater contour map in the Deep Zone on May 5, 2017. By May 5, the groundwater extraction system southeast of Property had been pumping for 17 days, and the groundwater flow direction in the Deep Zone was to the east across the Site. Based on the hydrographs for the Deep Zone wells monitored with pressure transducers (Appendix D), the groundwater flow direction switched from westward to eastward on April 20. The significant alteration of the Deep Zone groundwater flow direction is similar to the effects shown in 2013 and 2014, when there was a shift of the intermediate and deep groundwater flow directions from eastward to southeastward (see the SES groundwater contour maps for January 6, 2014, and June 16, 2015, provided in Appendix A).

Figure 19 presents groundwater contour maps for the shallow, Intermediate A, Intermediate B, and Deep Zones using groundwater levels measured on October 11, 2017. By October 11, the complete groundwater extraction system southeast of the Property had been pumping for 176 days. Based on the groundwater contour maps generated using the October 11, 2017, data, groundwater flow was generally to the east (ranging from east northeast to east southeast), and the horizontal hydraulic gradient varied from approximately 0.009 to 0.023 feet/foot in the Shallow Zone, from 0.051 to 0.137 feet/foot in the Intermediate A Zone, from 0.020 to 0.025 feet/foot in the Intermediate B Zone, and from 0.015 to 0.017 feet/foot in the Deep Zone. The horizontal hydraulic gradients in the Intermediate A and Deep Zones were higher in October 2017 than in March 2017, likely due to operation of the groundwater extraction system southeast of the Property. In locations with co-located wells in different zones, the vertical gradient was downward. Examples include the MW109/MW111 well pair (0.002 feet/foot downward) and the BB-8/MW105 well pair (0.14 feet/foot downward).

Figure 20 presents groundwater contours for the Shallow, Intermediate A, Intermediate B, and Deep Zones using data measured on March 14, 2019, over a year after shutdown of the 630 Westlake Avenue North groundwater extraction system. The groundwater flow direction in the Shallow and Intermediate A Zones was to the east-northeast. Discounting the highly variable groundwater contours on the Property due to interim action activities (i.e., injection of ISCO and

EVO), the general groundwater flow direction in the Intermediate B Zone on March 14, 2019 (Figure 20), was also to the east-northeast. Similar to the March 2017 groundwater level events, the groundwater flow direction in the Deep Zone was westward to the west of 9th Avenue North and eastward to the east of 9th Avenue North. The hydrographs summarizing the Deep Zone pressure transducer data (Appendix D) confirm the westward component of groundwater flow throughout a year with no known construction-related groundwater withdrawals in the South Lake Union area.

On March 14, 2019, horizontal hydraulic gradients varied from approximately 0.021 to 0.023 feet/foot in the Shallow Zone, from 0.028 to 0.040 feet/foot in the Intermediate A Zone, and approximately 0.002 feet/foot in the Deep Zone. Because of the convoluted Intermediate B Zone groundwater contours (as noted above), a horizontal hydraulic gradient was not estimated. In locations with co-located wells in different zones, the vertical gradient was generally downward (e.g., 0.10 feet/foot downward at the MW-142/MW-143 well pair).

Comparing the March 2017 and the March 2019 groundwater elevation contours for the Shallow, Intermediate A, and Deep Zones, the interim action activities have not significantly affected groundwater flow in these zones. Groundwater elevation contours for the Intermediate B Zone were not prepared for March 2017, so a direct comparison between the March 2017 and March 2019 Intermediate B Zone events cannot be made.

6.2.4 Aquifer Test Results

Table 2 provides the horizontal hydraulic conductivities estimated from the slug tests conducted by SES in 2013 (SES, 2013b). Hydraulic conductivities were estimated from both the falling head and rising head tests, with average hydraulic conductivities determined using all of the data at each well. Generally, the hydraulic conductivities determined from the rising head tests were somewhat higher than those determined from the falling head tests. The estimated average horizontal hydraulic conductivities varied from 7.5×10^{-6} (W-MW-01) to 2.2×10^{-2} cm/sec (MW115), with the lower values (10^{-6} to 10^{-4} cm/sec) in wells screened in silt and silty sand, and the higher values (10^{-3} to 10^{-2} cm/sec) in wells screened at least partially in relatively clean sand. The average horizontal hydraulic conductivity of tests conducted in the Intermediate A, Intermediate B, and Deep Zones were 4.3×10^{-3} cm/sec, 1.3×10^{-4} cm/sec, and 1.2×10^{-2} cm/sec, respectively. The slug test results are consistent with published laboratory test results for various mixtures of sand, silt, and clay (Wolfe, 1982).

Table 8 presents the soil physical properties determined by laboratory testing of soil samples collected during the 2017 pre-interim action investigations. PES used the Kozeny-Carmen equation (Payne et al., 2008) to estimate the hydraulic conductivity of the samples analyzed for grain size. The median calculated hydraulic conductivities of the samples collected in the Intermediate A, Intermediate B, and Deep Zones were 1.6×10^{-3} cm/sec, 1.0×10^{-3} cm/sec, and 1.9×10^{-2} cm/sec, respectively. The median calculated hydraulic conductivities of the sandy silt and silt, silty sand, and sand samples were 1.6×10^{-6} cm/sec, 1.6×10^{-3} cm/sec, and 1.9×10^{-2} cm/sec, respectively. The maximum calculated hydraulic conductivity was 9.4×10^{-2} cm/sec (MW-140 at 100 feet bgs), and the minimum calculated hydraulic conductivity was 2.3×10^{-7} cm/sec (MW-136 at 77 feet bgs). Outside of the median hydraulic conductivity for the Intermediate B Zone, these results were similar to the slug test results obtained by SES. The

vertical hydraulic conductivities measured in the laboratory varied from 8.5 x 10^{-7} (MW-140, 80 to 80.5 feet bgs) to 1.5 x 10^{-3} cm/sec (B-206, 50 to 51 feet bgs).

6.2.5 Groundwater Flow Velocity

The groundwater flow velocity (also known as the seepage velocity or average linear velocity) can be determined using the following equation (Fetter, 2001):

$$v = \frac{ki}{n},$$

where v = groundwater flow velocity (cm/sec),
k = hydraulic conductivity (cm/sec),
i = hydraulic gradient (feet/foot), and
n = effective porosity.

PES estimated the horizontal groundwater flow velocity using an effective porosity value of 30 percent (Wolff, 1982); the average horizontal hydraulic gradients for each zone on March 24, 2017, October 11, 2017, and March 14, 2019; and the range in horizontal hydraulic conductivity for each water-bearing zone determined from the slug tests (1.9 x 10^{-5} cm/sec to 2.2 x 10^{-2} cm/sec in the Intermediate A zone, 7.5 x 10^{-6} cm/sec to 2.1 x 10^{-4} cm/sec in the Intermediate B zone, and 1.5 x 10^{-3} cm/sec to 1.9 x 10^{-2} cm/sec in the deep zone). Since horizontal hydraulic conductivity could not be determined for the Intermediate B zone using the limited March 24, 2017 data, PES did not estimate the Intermediate B groundwater flow velocity for that date. Although no slug tests were conducted in the Shallow Zone, the lithologies of the shallow fill and recent deposits are variable enough that the rather wide range of horizontal hydraulic conductivity determined in the Intermediate A Zone is likely representative of the shallow zone also and were used to calculate the shallow zone groundwater flow velocity. For the March 24, 2017, data, PES estimated the horizontal groundwater flow velocity to vary from approximately 0.007 to 8.4 feet per day in the Shallow Zone, from approximately 0.008 to 9.6 feet per day in the Intermediate A Zone, and from approximately 0.10 to 1.3 feet per day in the Deep Zone. Using the October 11, 2017 data, PES estimated the horizontal groundwater flow velocity to vary from approximately 0.003 to 3.3 feet per day in the Shallow Zone, from approximately 0.017 to 20 feet per day in the Intermediate A Zone, from approximately 0.002 to 0.043 feet per day in the Intermediate B Zone, and from approximately 0.23 to 2.9 feet per day in the Deep Zone. Using the March 14, 2019 data, PES estimated the following approximate horizontal groundwater flow velocities:

- Shallow Zone: 0.004 to 4.8 feet per day;
- Intermediate A Zone: 0.005 to 8.4 feet per day; and
- Deep Zone: 0.03 to 0.4 feet per day.

6.3 Nature and Extent of Contamination

This section provides a summary of the nature and extent of contamination at the Site, updating the information provided in the Final Interim Action Work Plan (PES, 2018) with soil data collected between August and October 2018 and groundwater data collected between October

2018 and February 2019. This summary is somewhat condensed from the discussion presented in the Final Interim Action Work Plan, focusing on the more recent soil data collected on the Property, the off-Property soil data, and the most recent round of groundwater data.

6.3.1 Screening Levels

In the discussion below, screening levels are used to provide a basis for describing the nature and extent of contamination. These screening levels are not cleanup levels or cleanup standards for the Site. Cleanup standards for the Site will be established in the RI/FS and during preparation of the Cleanup Action Plan ("CAP") for the Site. Cleanup standards will be developed using MTCA Method B for soil, groundwater, surface water, indoor air in accordance with WAC 173-340-740, WAC 173-340-720, WAC 173-340-730 and WAC 173-340-750, respectively. Cleanup standards include COC concentrations that are protective of human health and the environment (cleanup levels) and where those concentrations must be met (point of compliance).

For purposes of this work plan, the screening levels used are consistent with the approach outlined in Ecology's 2015 letter (Ecology, 2015b), which required MTCA Method B as the basis for establishing cleanup levels at the Site. Following the MTCA process for developing cleanup levels, Ecology (2016a and 2017) developed and updated Method B soil and groundwater cleanup levels for PCE, TCE, cDCE, tDCE, and VC for this Site. Ecology (2016a and 2017) also summarized and updated the sub-slab soil and groundwater vapor intrusion screening levels based on Ecology's draft 2009 guidance document (Ecology, 2009) and revised draft guidance document (Ecology, 2016b).

Table 9 presents the screening levels, including those developed by Ecology for PCE, TCE, cDCE, tDCE, and VC, and for those developed by PES (following Ecology's methodology) for other CVOCs and petroleum hydrocarbons detected in soil and groundwater samples collected historically at the Site. Table 9 also presents the most recent Ecology vapor intrusion screening levels (Ecology, 2016b). These screening levels are protective of the exposure pathways identified in the conceptual site model ("CSM") described Section 7.

6.3.2 Soil

Appendix C provides tables of the analytical results for soil samples collected during investigations of the Site. The detection statistics for the primary constituents representing substances handled at the Property (CVOCs and petroleum hydrocarbons) are presented in Table 10. For the 1,137 Site soil samples submitted for laboratory analysis, PCE, TCE, and cDCE were detected in the majority of the samples analyzed, GRO was detected in less than half of the samples analyzed, and tDCE, VC, and BTEX were detected in less than one third of the samples analyzed. PCE was detected most frequently in the Property soil samples (85 percent). Total xylenes (5 percent frequency of detection) and ORO (0 percent detection in the four samples analyzed) were the least detected constituents. All of these constituents (CVOCs and petroleum hydrocarbons) were detected in less than one third of the 368 soil samples collected outside the Property and submitted for laboratory analysis, with GRO detected the most frequently (31 percent of the samples analyzed) and tDCE detected the least frequently (4 percent of the samples analyzed).

Figures 21 through 24 show the estimated areas at the Site where soil containing PCE, TCE, cDCE, and/or VC are above one or more of the screening levels. To create the figures depicting the extents of CVOCs above the screening levels, the soil CVOC results and the horizontal and vertical coordinates of the sampling locations were entered into the Studio model. Data from soil samples that were collected in the area and depth range of ERH/SVE treatment prior to ERH/SVE treatment in 2013 were not included in the model. Data from soil samples, however, that were collected post-treatment in the area and depth range treated by ERH/SVE were included in the model. All soil data collected outside the depth range and area treated by the ERH/SVE system were included in the model. PES used the program's kriging algorithm to create a three-dimensional model of the subsurface CVOC concentrations in soil. Once the model was created, PES cut horizontal slices in the elevation ranges of the Shallow (above elevation 20 feet relative to NAVD 88), Intermediate A (elevation -15 to 20 feet), Intermediate B (-45 to -15 feet), and Deep (-100 to -45 feet) Zones near the Property. The vadose zone is not presented in these figures due to a limited number of samples in the relatively thin unit and the plan to excavate all of it during Property redevelopment. The interim action work plan discusses the soil results collected prior to ERH/SVE treatment. Following is a discussion of the contaminants in soil after ERH/SVE treatment in 2013.

6.3.2.1 Contaminants in Soil on the Property after ERH/SVE Treatment

Except for a few shallow samples collected in 2014 and soil samples collected at IW06, MW130, and MW131 in 2016, the majority of the soil samples documenting the extent of CVOCs at the Property post-ERH/SVE treatment were collected in the geotechnical and environmental investigations conducted in 2107 and 2018 (Figure 6). Soil CVOC concentrations within the footprint and in the depth range treated by the ERH/SVE system (elevations greater than approximately 0 feet) were generally over an order of magnitude lower in concentration than in soil samples collected pre-treatment. Examples include B-210 (two to four orders of magnitude decrease compared to G-MW3), IW-19B (four orders of magnitude decrease compared to R-MW1), MW-137 (four orders of magnitude decrease compared to DB06), and MW-139 (two orders of magnitude decrease compared to DB08 and DB13).

Soil samples collected in 2017 and 2018 in four locations at the Property had CVOC concentrations over two orders of magnitude above the screening level in the depth range treated by the ERH/SVE system: the area near the former western boiler room (near MW-133), the area near the former loading dock (near MW-135), the area at the western end of the northern sewer line (at B-242), and the southeast corner of the Property:

1. **Near the Former Western Boiler Room.** The area just south of the former western boiler room contained Sump No. 8, a drain, and a utility trench, one or more of which may have allowed transport of PCE into the subsurface. The former dry cleaning machines that used PCE were reportedly in the floor above, located on the first floor just to the east of the former western boiler room. PCE was detected at 3.62 mg/kg in the sample collected at 20 feet bgs (elevation of 20 feet) in MW-133 and elsewhere in the area, including B-243, B-255/B-255A, B-261, B-262, IW-46B, and MW-152, with PCE concentrations ranging up to 112J+ mg/kg between 5 and 35 feet bgs (elevation 34.9 and 4.9 feet). Additional borings drilled south of the area treated by the ERH/SVE system also found soil with PCE over two orders of magnitude above

the screening level, including B-217, B-235, B-236, B-237, DB11, IW-51A, IW-27C, and IW-55B. PCE concentrations at these locations were up to 16,400 mg/kg (B-236) between 25 and 45 feet bgs (elevation 26.9 and 6.8 feet).

Near the former boiler room, PCE was detected over two orders of magnitude above the screening level below the depth range treated by the ERH/SVE system at B-211, B-243, B-235, DB10, IW-46B, IW-48B, IW-50A, MW-152, and MW-164; the maximum PCE concentration at depth in this area was 691 mg/kg in MW-133 at 58 feet bgs (elevation -25.0 feet), with a maximum depth with PCE over two orders of magnitude above the screening level of 85 feet (elevation -45 feet) in MW-133. Soil PCE concentrations at this level were bounded in B-211 (0.000320U mg/kg at 100 feet bgs, elevation -60.3 feet), B-243 (0.00378 mg/kg at 70 feet bgs, elevation -30.1 feet), MW-133 (0.00127 mg/kg at 95 feet bgs, elevation -55.0 feet), B-217 (0.000319U mg/kg at 115 feet bgs, elevation -63.2 feet), DB11 (0.16 mg/kg at 55 feet bgs, elevation -3.2 feet), and MW-164 (0.00236J mg/kg at 80 feet bgs, elevation 40.3).

2. **Area Near the Former Loading Dock.** PCE concentrations ranged from 1.01 to 933 mg/kg in soil samples collected between 0 and 40 feet bgs (above elevation 0 feet) in B-220 through B-222 and MW-135. PCE was detected over two orders of magnitude above the screening level below the depth range treated by the ERH/SVE system at B-206, B-218, B-220, B-221, B-222, B-241, IW-8C, IW-11D, IW-12D, IW-13D, IW-14D, IW-22C, IW-24C,MW-135, MW-162, and MW-163, with concentrations ranging up to 8,270 mg/kg between 40 and 95 feet bgs (elevation -2.5 and -55.9 feet). Although B-218, B-220, and B-222 were not drilled deep enough to bound the base of soil PCE at this concentration level, soil PCE concentrations at this level were bounded in B-206 (0.00566J mg/kg at 59 feet bgs, elevation -19.9 feet), B-221 (0.0853J mg/kg at 70 feet bgs, elevation -31.0 feet), IW-8C (0.085 mg/kg at 75 feet bgs, elevation -37.5 feet), IW-11D (0.0140 mg/kg at 75 feet bgs, elevation -36.8 feet), MW-135 (0.190 mg/kg at 65 feet bgs, elevation -25.9 feet), IW-13D (0.00194 mg/kg at 95 feet bgs, elevation -55.8 feet), MW-162 (0.150 mg/kg at 80 feet bgs, elevation -41.6 feet), and MW-163 (0.0109 mg/kg at 100 feet bgs, elevation -60.7 feet).

   PCE was also detected over two orders of magnitude above the screening level outside of the ERH/SVE treatment area at B-223 through B-230, B-232, B-233, B-238, B-240, IW-1C, IW-2C, IW-3C, and IW-8B, with soil PCE concentrations up to 5,560 mg/kg (B-223 at 30 feet bgs, elevation 9.1 feet). Most of these borings (B-223, B-226, B-227, B-229, B-230, B-232, B-233, and B-238) were not drilled deep enough to bound the base of soil PCE at this concentration level, but soil PCE concentrations at this level were bounded in B-224 (60.5 feet bgs, elevation -21.4 feet), B-225 (36 feet bgs, elevation 3.1 feet), B-228 (36 feet bgs, elevation 3.1 feet), B-240 (42 feet, elevation -2.8), IW-1C (65 feet bgs, elevation -25.9 feet), IW-2C (55 feet bgs, elevation -18.9 feet), and IW-8B (40 feet bgs, elevation -0.8 feet).

3. **Area at the Western End of the Northern Sewer Line.** PCE concentrations in the depth range treated by the ERH/SVE system were over two orders of magnitude above the screening level in B-242, B-249, B-250, B-251, B-252, B-253A, B-255A, B-257, and B-260, with concentrations ranging from 1.97 to 21.7 mg/kg between 10 and 29 feet bgs (elevation 30.6 and 10.2 feet). These concentrations were bounded vertically by a PCE concentration at 30 feet bgs (elevation 8.8 feet) of 0.205 mg/kg. PCE was also detected over two orders of magnitude above the screening level outside of the ERH/SVE treatment area at B-253A, B-254/B-254A, B-261, B-262, and B-265, with concentrations varying from 2.29 to 46.7 mg/kg between 8 and 30 feet bgs (elevation 31.8 and 9.7 feet).

4. **Area at the Southeast Corner of the Property.** PCE concentrations in two borings drilled in this area (B-246 and DB09) were over two orders of magnitude above the screening level. PCE ranged from 4.07 to 12.7 mg/kg between 25 and 40 feet bgs (elevation 14.9 and -0.1 feet) and were 6.1 and 1.3 mg/kg at 30 and 40 feet bgs (elevation 10 and 0 feet) in DB09. These concentrations were bounded vertically in B-246 at 43 feet bgs (elevation -3.1 feet) and in DB09 at 50 feet bgs (elevation -10 feet).

CVOCs (primarily PCE, TCE, and cDCE) were above the screening levels in multiple samples collected below the volume treated by the ERH/SVE system in many other borings, including B-203, B-205, B-206, B-207, B-218, B-244, DB03, DB05 through DB08, IW-21B, MW101, MW130, MW131, MW-132, MW-133, MW-134, W-MW-03, and W-MW-04.

Figures 21 through 24 present the distribution for the Site of PCE, TCE, cDCE, and VC in soil in the elevation ranges of the Shallow (above 20 feet relative to NAVD 88), Intermediate A (-15 to 20 feet), Intermediate B (-45 to -15 feet), and Deep (-100 to -45 feet) Zones across the Site. Figures 25 through 33 provide soil PCE concentrations relative to the screening level (0.025 mg/kg) along geologic cross sections A-A' through I-I'. Figures 21 through 33 were prepared using all soil data collected outside of the ERH/SVE treatment volume (laterally and vertically), and all soil data within the treatment volume that were collected post-treatment. PCE and TCE were the primary CVOCs detected in soil above the screening levels in all four water-bearing zones. In the Shallow Zone, soil CVOC screening level exceedances were located in the areas near the former western boiler room, the former loading dock, the northern sewer line, the southeast corner of the Property, and immediately south and east of the southeast corner of the Property. CVOC screening level exceedances in the Intermediate A and B Zones were located in the same areas on and off the Property, with decreasing areas on the Property above the screening levels with depth (centered on the areas near the former western boiler room and former loading dock). In the Deep Zone, CVOC detections above the screening levels were limited to a narrow southwest-northeast trending swath across the Property centered on the areas near the former western boiler room and former loading dock, with screening level exceedances primarily near the top of the water-bearing zone.

6.3.2.2 Contaminants in Soil Outside of the Property

While contamination at the remainder of the Site (outside of the Property boundaries) has not been fully characterized; samples have been collected during previous investigations (see Section 4.0) and the results are summarized below.

CVOC concentrations in soil samples collected outside of the Property were generally lower than those collected within the Property, with most of the screening level exceedances found in borings drilled adjacent to the Property boundaries (B-215, MW104, MW107, MW-140, W-MW-01, and W-MW-02) or downgradient along the alley between 8th Avenue North and 9th Avenue North (MW103, MW108, MW109, MW110, and MW111). PCE, TCE, and cDCE were the primary CVOCs detected, with infrequent detections of tDCE and VC. The maximum detections of PCE, TCE, cDCE, tDCE, and VC were 19 mg/kg (MW107 at 35 feet bgs, elevation 8.8 feet), 3.57 mg/kg (MW-158 at 30 feet bgs, elevation 11.1 feet), 3.00 mg/kg (MW-158 at 30 feet bgs, elevation 11.1 feet), 0.0221 mg/kg (MW-160 at 55 feet bgs, elevation -12.5 feet), and 0.656 mg/kg (MW-143 at 60 feet bgs, elevation -18.0 feet). The predominance of CVOC detections in the Intermediate A and B Zones indicates that their presence in soil samples may be due to their presence in groundwater.

Petroleum hydrocarbon results in soil samples collected outside of the Property were generally low, with isolated screening level exceedances near historical sources on nearby properties (for example, MW 7 on the 800 Aloha Street property). Soil GRO and BTEX results from monitoring wells MW107, MW121, MW124, MW-142, MW-143, MW-145, MW-147, MW-153, MW-158, MW-158A, MW-159, MW-160, MW-161, W-MW-01, and W-MW-02 were all below the screening levels.

6.3.3 Groundwater Quality

This section provides a summary of the analytical results for groundwater monitoring performed after completion of the ERH/SVE independent action. The IAWP presented a detailed discussion of the groundwater monitoring results before and after operation of the ERH/SVE system. The following discussion focuses on the groundwater quality post-ERH/SVE system operation.

The Appendix C tables provide the complete analytical results for groundwater samples collected during investigations on and off the Property. Table 11 presents a statistical summary of the primary constituents representing substances handled at the Property (CVOCs and petroleum hydrocarbons), and Tables 12 through 14 provide the CVOC results for the Shallow, Intermediate (A and B), and Deep Zones, respectively. Figures 25 through 33 provide 2019 groundwater PCE, TCE, cDCE, and VC concentrations along geologic cross sections A-A' through I-I'. Figures 34 through 37 present map views of the 2019 groundwater PCE, TCE, cDCE, and VC concentrations in the Shallow, Intermediate A, Intermediate B, and Deep Zones, respectively. Figure 38 depicts the results of the MNA screening.

To create the figures depicting the extents of CVOCs above the screening levels, the groundwater CVOC results (collected in January and February 2019) and the horizontal and vertical coordinates of the sampling locations were entered into Earth Volumetric Studio. PES

used the program's kriging algorithm to create a 3-dimensional model of the subsurface CVOC concentrations in groundwater. Once the model was created, PES used the model to prepare plan views (Figures 34 through 37). For the plan views, PES cut horizontal slices at depths representative of the shallow (above 20 feet relative to NAVD 88), Intermediate A (-15 to 20 feet), Intermediate B (-45 to -15 feet), and deep (-100 to -45 feet) water-bearing zones near the Property. Since the model uses average concentrations for areas beyond the lateral and vertical extents of available data, PES used judgment to locate the extent lines as needed in these areas and indicated the uncertain nature of the lines with question marks. Following is a brief discussion of the nature and extent of GRO and CVOCs at the Site.

6.3.3.1 2017 through 2019 Groundwater Sampling Results

Groundwater samples were collected in 2017 and 2018 to establish a baseline of the groundwater conditions prior to conducting the interim action, in a limited number of wells between 2018 interim action ISCO injection events on the Property, and in a more complete groundwater monitoring network at the completion of the ISCO injections (January and February 2019). All sample results were reported to the MDL to provide VC detection limits below the screening level. Constituents detected at least once above the MDL included 40 VOCs and GRO (Table C-7 in Appendix C). Eight VOCs were detected at least once above their respective screening levels, including benzene, 1,1-dichloroethene ("DCE"), cDCE, tDCE, 1,2-dichloropropane, ethylbenzene, PCE, TCE, and VC. Following are brief discussions of the 2017 through 2019 results by water-bearing zone.

Shallow Zone. Four CVOCs (PCE, TCE, cDCE, and VC) were detected at least once above their respective screening levels in the Shallow Zone samples. As shown in Figure 34, the highest detections of these CVOCs in shallow groundwater were in the southern half of the Property (wells F5, G12, J5, K8, and N7). Monitoring wells R-MW5 on the east side of Dexter Avenue North; MW125 on Valley Street; MW-9, MW121 (except for VC), and MW-159 (except for VC) in the 8th Avenue North ROW; and SCS-2 on the 800 Aloha Street Parcel provide the lateral extent of the shallow CVOC plume. The CVOC cross sections (Figures 25 through 33) confirm the shallow CVOC plume at and potentially near the Property, but data are not available to determine the lateral extent of groundwater with CVOCs above the screening levels to the southwest of the Property or in the alley between 8th and 9th Avenues North.

The only petroleum-related constituents detected above their respective screening levels in the Shallow Zone were GRO, benzene, and ethylbenzene. None of the GRO detections at or adjacent to the Property were above the screening level. The highest benzene concentrations were found in three wells at and near the 800 Aloha Street Parcel (SCL-MW101, SCL-MW105, and SCS-2). The six benzene detections above the screening level in Property wells (F5, F9, J5, and R-MW2) were just above the screening level. Ethylbenzene, toluene, and total xylenes were not detected above the screening levels at the Property. Based on these results, current residual petroleum hydrocarbons in groundwater on and near the Property appear to be minimal.

Intermediate A Zone. Six CVOCs were detected at least once above their respective screening levels in the Intermediate A Zone samples, including DCE, cDCE, 1,2-dichloropropane, PCE, TCE, and VC. As shown in Figure 37, the highest detections of these CVOCs in Intermediate A groundwater were in wells near the former loading dock (IW-4A, IWA-9A, IW-19A, and

MW-149), wells near and south of the former western boiler room (IW-42A, IW-45A, and MW-151), one well south of the Property (MW-146), and east of the Property (BB-8, MW108, MW110, MW120, and MW-156). Monitoring wells MW115 (except for VC), MW116, and MW119 on 9th Avenue North and GEI-1 in the northwest corner of the 630 Westlake Avenue North property provide lateral extent of the Intermediate A CVOC plume (Figure 37), but additional data are necessary to confirm the CVOC concentrations in the Intermediate A Zone south of the Property, north and northeast of MW108, and to the south and east of the area around BB-8, MW110, and MW-146 (Figure 35). Concentrations of CVOCs above 1,000 µg/L were found in 2012 and 2013 in decommissioned monitoring well MW114 (located on the Seattle Department of Transportation property south of Roy Street). The current CVOC extent map for the Intermediate A Zone, which is based on the most recent groundwater results, does not consider the historical MW114 results. The current extent of CVOCs has been qualified with a query, indicating the approximation of the CVOC extents in this area.

BTEX constituents were not detected above their respective screening levels in the Intermediate A Zone samples collected on the Property. Benzene was detected in off-Property well MW108 above the screening level, but these relatively low-level detections (maximum of 4.00 µg/L) appear to be isolated relative to the results in other nearby Intermediate A wells and may indicate a source other than the former USTs at the Property. ESC indicated that the chromatograms for the GRO concentrations orders of magnitude above the screening levels did not resemble the fuel standard and that the results were likely due to the presence of CVOCs in the samples (see the data validation review memorandum for laboratory report L1055718 in Appendix E). Based on these results, current residual petroleum hydrocarbons in groundwater on and near the Property appear to be minimal.

Intermediate B Zone. Six CVOCs were detected at least once above their respective screening levels in the samples collected in the Intermediate B Zone, including DCE, cDCE, tDCE, PCE, TCE, and VC. As shown in Figure 38, the highest detections of these CVOCs in Intermediate B groundwater were in wells near the former loading dock (IW-17B, IW-24B, IW-4C, IW-8C, IW-1D, IW-3D, and MW-150), wells near and south of the former western boiler room (IW-47B, IW-15C, IW-8D, MW130, and MW-152), one well south of the Property (MW-147), and one well northeast of the Property (MW-157), with decreasing concentrations in wells located to the east of the Property (MW111, MW-143, and MW-145). Monitoring wells MW112 (west side of Dexter Avenue North), MW126 (alley east of the 800 Aloha Street parcel parking lot), and MW-148 (southeast of the Property) provide lateral extent of the Intermediate B CVOC plume. The low CVOC concentrations in the reconnaissance groundwater samples collected from B-213 (Dexter Avenue North) during drilling also provide lateral extent of the Intermediate B CVOC plume. Additional data are necessary to confirm the CVOC concentrations in the Intermediate B Zone southwest, south, east, and northeast of the Property (Figure 36).

The only petroleum-related constituent detected above its respective screening level was benzene, detected once each in MW130 and MW-135 on the Property. ESC indicated that the chromatograms for the GRO concentrations above the screening levels in the MW130, MW-132, MW-135, MW-150, MW-152, and MW-156 samples did not resemble the fuel standard and that the results were likely due to the presence of CVOCs in the samples. Based on these results, current residual petroleum hydrocarbons in groundwater on and near the Property appear to be minimal.

Deep Zone. Five CVOCs were detected at least once above their respective screening levels in the samples collected in the Deep Zone, including DCE, cDCE, PCE, TCE, and VC. As shown in Figure 37, the highest detections of these CVOCs in deep groundwater were in IW-9D (at the former western boiler room on the Property); in MW-162 through MW-164 (first sampling event for both wells); and in MW113 (east of the Property). CVOC concentrations in deep monitoring wells MW104, MW-160, and MW-161, located near the eastern Property boundary, however, are far lower than on the Property (and often near or below the screening levels), indicating that the bulk of the Deep Zone CVOC mass is at the Property. MW102, MW105, MW106, MW122, MW123, MW124, MW-138, MW-140 (last sampled in April 2018), FMW-3D (last sampled in June 2017), and FMW-131 (last sampled in June 2017) provide lateral extent of the deep CVOC plume. As seen on the CVOC cross sections (Figures 25 through 33), additional deep wells are needed in the center of the deep CVOC plume (near MW103 or MW113 and south of FMW-129) and in the eastern portion of the CVOC plume (by Westlake Avenue North) to confirm the vertical extent of CVOCs above the screening levels. Additionally, given the predominant westerly deep groundwater flow direction, an additional well is needed on Dexter Avenue North west of the loading dock area.

The only petroleum-related constituent detected above its respective screening level in the Deep Zone was benzene in wells MW113 and MW128 outside of the Property. These benzene results appear to be isolated relative to the results in other deep wells and may indicate a source other than the former USTs at the Property. ESC indicated that the chromatograms for the GRO concentrations above the screening levels did not resemble the fuel standard and that the results were likely due to the presence of CVOCs in the samples. Based on these results, current residual petroleum hydrocarbons in groundwater on and near the Property appear to be minimal.

6.3.3.2 MNA Screening Results

To determine the potential for natural biodegradation in the CVOC plume, PES screened the 2017 and 2018 CVOC and MNA data (Tables 12 through 16) using the first step of the screening procedure outlined in EPA's technical protocol for evaluating natural attenuation of CVOCs (EPA, 1998). The process involved assigning values to the applicable natural attenuation data (alkalinity, chloride, ethane/ethene, ferrous iron, methane, nitrate, sulfate, TOC, pH, DO, ORP, and PCE breakdown products (TCE, cDCE, and VC)) that reflect the likely occurrence of natural biodegradation (Table 2.3, EPA, 1998). Table 17 provides the individual screening values for each well with MNA data, including a summary score for each well. PES highlighted the summary score indicating whether there is inadequate, limited, adequate, or strong evidence of anaerobic biodegradation of CVOCs based on Table 2.4, EPA, 1998). Figure 38 summarizes the results.

The MNA screening indicates adequate or strong evidence of anaerobic biodegradation in the following wells:

- **Shallow Zone Wells.** F13, J5, J15, and R-MW6;
- **Intermediate A Zone Wells.** MW107, MW108, MW109, MW115, MW119, MW131, MW-142, MW-144, MW-146, MW-149, MW-151, and MW-156;

- **Intermediate B Zone Wells.** MW130, MW-132, MW-134, MW-135, MW-136, MW-143, MW-145, MW-147, MW-152, MW-157, and W-MW-02; and
- **Deep Zone Wells.** MW103, MW113, MW128, MW-133, MW-137, MW-140, MW-141, MW-158A, MW-160, and MW-161.

The screening results for all other wells indicate limited evidence of anaerobic biodegradation, except for three wells located at the edge of or beyond the limits of the CVOC plume (Intermediate A well BB-8, Intermediate B well MW112, and deep well MW124). As indicated by the MNA screening, the strongest evidence for anaerobic biodegradation is currently in wells located beneath or downgradient of the Property and potentially within reach of the pilot test injections conducted between November 2015 and January 2016. This is especially evident in wells located in and downgradient of the former loading dock area (F13, MW-132, MW-134, MW-135, MW-142, MW-143, MW-149, and MW-160) and the former western boiler room (J5, J15, MW131, MW-133, MW-137, MW-141, MW-144, MW-145, MW-151, MW-152, and MW-161).

6.3.4 Soil Vapor Results

Table 18 provides the analytical results for the VOCs detected in soil vapor samples collected from the three vapor monitoring wells (SV01, SV02, and SV03) installed in the sidewalk on the east side of 8th Avenue North (Figure 4; SES, 2013b); there has been no vapor monitoring on the Property. The soil vapor samples were collected by SES five months prior to start-up of the ERH/SVE system at the Property in 2013. The soil vapor samples were collected in the vadose zone just above the groundwater capillary fringe at depths ranging from 11.75 to 12.75 feet bgs and analyzed for PCE, TCE, cDCE, tDCE, and VC. PCE was detected in all three soil vapor samples at concentrations varying from 1.5 to 4.6 micrograms per cubic meter ("µg/m^3"), well below Ecology's soil vapor screening level of 321 µg/m^3 for PCE. TCE was only detected in the SV03 soil vapor sample at a concentration of 0.39 µg/m^3, also below the soil vapor screening level of 12 µg/m^3 for TCE. VC and cDCE were only detected in the SV01 soil vapor sample at concentrations of 0.71 and 0.31 µg/m^3, respectively. The VC concentration in the SV01 sample was below the soil vapor screening level of 9.3 µg/m^3. There is no soil vapor screening level established for cDCE.

PES collected vapor samples from these probes in September 2018 and in February 2019, submitting the samples for analysis by EPA Method TO-15. PCE was not detected, except for an anomalous 2018 duplicate sample from SV01; in September 2018 the primary SV01 result was below the detection level of 2.72 µg/m^3 and the duplicate SV01 sample was detected at 137 µg/m^3, which was below Ecology's soil vapor screening level of 320 µg/m^3. TCE, cDCE, and VC were not detected in the vapor samples collected in 2018 and 2019.

6.3.5 Nature and Extent of Contamination Summary

As discussed above, the primary constituents detected at the Site, especially at the Property, consist of PCE and its breakdown products (TCE, cDCE, tDCE, and VC). The ERH/SVE system installed and operated between April and December 2013 treated soil and groundwater down to an elevation of 0 feet over a large portion of the Property (see Figure 8). Post treatment soil sampling in the treatment zone has generally found decreased CVOC concentrations ranging

from one to four orders of magnitude compared to pretreatment concentrations. Soil and groundwater sampling conducted at the Site in 2017 through 2019 has identified areas of soil and groundwater CVOC contamination above screening levels. The highest concentrations are largely present at the Property at the margins of or outside of the ERH/SVE treatment zone, both laterally and vertically. Two primary areas of high CVOC concentrations are present at the Property: near the former western boiler room and near the former loading dock (see Figure 6). Although other areas at the Property contain soil and groundwater concentrations above the screening levels, most are either relatively small and localized (e.g., near B-244 and DB07) or are suspected to be a result (based on location and depth) of groundwater transport of CVOCs from the areas around MW-135 and B-217.

Former Western Boiler Room Area. Based on the presence of CVOCs in shallow soil samples in and near the former western boiler room (B-243, IW-46B, MW-133, and MW-152) and CVOCs at greater depths south and east of the area (B-211, B-217, B-235, B-236, and MW130), the CVOC release to the subsurface likely occurred in the area south of the former boilers. Sump No. 8, a drain, or a utility trench in that area may have allowed transport of PCE into the subsurface. The former dry cleaning machines that used PCE were reportedly located on the first floor just to the east of the former western boiler room. The lack of shallow soil CVOC concentrations multiple orders of magnitude above the screening levels to the south and east of the former western boiler room area (e.g., B-217, B-236, and B-211), the lack of PCE sources above those areas, and the presence of higher soil CVOCs at deeper depths in those areas indicate that the presence of CVOCs at those locations has likely resulted from downward and lateral transport of CVOCs sometime after the subsurface release near the boiler room. This is reflected in the shift in the soil CVOC centroid somewhat to the south and east with depth. The area is bounded vertically by soil samples collected between elevations -30 and -60 feet beneath the boiler room area, and laterally by borings B-247, B-248, and MW-136 and borings in Dexter Avenue North. Groundwater CVOC concentrations in and near the area increase with depth from the Shallow Zone (J5) through the middle part of the fine-grained Intermediate B Zone (MW-152, IW-15C, and IW-20C), with concentrations decreasing by the base of the Intermediate B Zone and top of the Deep Zone (IW-9D and MW-164). Transport of CVOCs from this area has impacted nearby wells in the Shallow (K8 and N7), Intermediate A (IW-41A, IW-42A, and IW-45A), and Intermediate B (IW8D, IW-37B, IW-45B, and MW130) Zones. Soil samples from Deep Zone monitoring well MW-164 in the area indicate decreasing CVOC concentrations with depth through the lower part of the Intermediate B Zone and upper part of the Deep Zone; given these low concentrations in the Deep Zone, the CVOC concentrations above the screening levels in MW-164 are likely due to downward transport from the source area located above. Monitoring wells in Dexter Avenue North bound area groundwater CVOC concentrations above the screening levels to the west. Given the general groundwater flow direction to the east in the Shallow and Intermediate Zones and to the west in the Deep Zone, the presence of CVOCs in soil and groundwater to the south of the former western boiler room may be a result of historical construction dewatering at properties to the south.

Former Loading Dock Area. This area is located at and beyond the northern boundary of the ERH/SVE treatment area. Concentrations of CVOCs multiple orders of magnitude above the screening levels in shallow samples from MW-135 indicate that a CVOC release to the subsurface occurred in this area, likely from the north-south trending sanitary sewer near the loading dock. Concentrations of CVOCs multiple orders of magnitude above the screening

levels in shallow samples from B-240 indicate that a CVOC release likely occurred in the Sump No. 5 area also, but the results in the area as a whole indicate that the primary release was near the former loading dock. Like with the boiler room area, the CVOC concentrations in the borings and wells drilled in the area indicate a shift in the CVOC centroid to the southeast with depth, indicating both downward and lateral transport of CVOCs over time. The area is bounded vertically between elevations of -31 and -38 feet at B-221 and IW-8C; lateral extent is indicated by the B-239 results and at depth by the IW-1C, IW-8B, and B-240 results. Soil samples from Deep Zone monitoring wells MW-162 and MW-163 in the area indicate decreasing CVOC concentrations with depth through the lower part of the Intermediate B Zone and upper part of the Deep Zone; given these low to below screening level soil concentrations in the Deep Zone, the groundwater CVOC concentrations above the screening levels in these wells are likely due to downward transport from the source area located above. Groundwater CVOC concentrations are highest in the Intermediate A and Intermediate B Zones at and to the east and southeast of MW-135, decreasing at least an order of magnitude by the Property boundary. The concentrations of PCE decrease and the concentrations of the breakdown products increase with transport from the source area.

As discussed above, CVOC concentrations in soil samples outside of the Property were low, with most CVOC exceedances of the screening levels at depths and locations indicating the likelihood that they are due to groundwater transport of CVOCs from the Property. Groundwater above the CVOC screening levels extends to the south and east of the Property, with the area above the screening levels increasing with depth. The highest CVOC concentrations outside of the Property are found in intermediate and deep wells east of the Property, between 8th and 9th Avenues North (MW-156, MW108, MW109, MW110, and MW113), with two intermediate wells on the south side of Roy Street south of the Property (MW-146 and MW-147) also with CVOC concentrations multiple orders of magnitude above the screening levels. The elevated CVOC concentrations east of the Property are consistent with the distribution of CVOCs in soil and groundwater in the former boiler room area and the former loading dock area on the Property, the easterly groundwater flow direction, and the Site-wide MNA screening data. The presence of CVOC concentrations multiple orders of magnitude above the screening levels south of the Property, however, is not. The southerly presence of the plume is thought to be the result of past construction dewatering at properties to the south. A 1997 groundwater sample collected from Intermediate A Zone well BB-5 that did not detect CVOCs above the screening levels supports this thought. The groundwater CVOC concentrations east of 9th Avenue North, though above the screening levels, are low and may be in part due to the area-wide presence of CVOCs resulting from a variety of CVOC sources. Additional RI work is needed to further define the nature and extent of contamination, including the potential for vapor intrusion in and near areas with shallow CVOCs above the groundwater screening levels.

7.0 PRELIMINARY CONCEPTUAL SITE MODEL

This section provides a summary of the preliminary conceptual site model ("CSM") for the Site. The preliminary CSM has been developed from the historical investigation results and the implementation of the ERH/SVE system and ERD pilot tests previously conducted. The CSM will be revisited and updated as needed once the additional RI data has been collected and evaluated. Figure 39 provides a visual depiction of the CSM.

7.1 Contaminant Sources

The primary sources of contamination were at the Property and included: (1) spills and releases of PCE-containing liquids from the former dry cleaning operations, and (2) spills and releases of petroleum hydrocarbons from former USTs. The primary contaminants of concern ("COCs") in both soil and groundwater as a result of these releases include PCE and its breakdown products TCE, cDCE, and VC. Other CVOCs are detected less frequently and/or at much lower concentrations in soil and groundwater than the primary COCs.

Based on the data collected at the Property, primary sources of CVOCs in the subsurface were located near the former western boiler room and the sewer line located near the former loading dock just east of Building C (east and north of well MW-135). Dry cleaning effluent containing spent PCE may have flowed into a floor drain, Sump No. 8, or the utility trench south of the boilers, all of which likely connected through the southern sewer line to the sewer. Results of sludge samples collected from cleanouts and soil and groundwater samples collected during the pre-interim action investigation indicate that effluent containing spent PCE also was likely conveyed through the northern sewer line. Additional smaller releases may have contributed to shallow PCE contamination elsewhere on the Property, including in the vicinity of the former water/sludge treatment facility that operated in Building C. Dry cleaning operations ceased in the 1990s, so any releases to the subsurface would have ended then. Operation of the ERH/SVE system reportedly removed approximately 98 percent of the original CVOC mass in the depth range treated (to approximately 40 feet bgs or 0 feet relative to NAVD 88).

The primary source of petroleum hydrocarbon contamination at the Property was the UST system located in the northeast corner of the Property, with impacts to soil and groundwater. The USTs were removed between 1966 and 1985. Four USTs containing heating oil (also referred to as Bunker C fuel oil) were located in the southwestern portion of the Property; those USTs were removed in 2013. Operation of the ERH/SVE system likely removed the residual sources of petroleum hydrocarbons in the depth range treated. However, shallow soil containing petroleum hydrocarbons located in the 8th Avenue North ROW immediately east of the Property (which may have been at least partially sourced at the Property), may still exist; the contaminated soil is vertically limited to the Shallow and Intermediate A and B Zones. Additional sources of petroleum hydrocarbons to the subsurface were documented to have existed in many of the other properties that are included within the Site and are not likely attributable to the former American Linen Supply property (Section 2.3), including confirmed releases at 800 Aloha Street, 701 9th Avenue North, 739 9th Avenue North, and 710 9th Avenue North. Historical uses of other properties at the Site that could be sources of CVOCs (e.g., vehicle repair at 800 Aloha Street and painting activities at 739 9th Avenue North) have been documented (SES, 2013b).

7.2 Chemical Fate and Transport

7.2.1 Contaminant Fate Processes

Several physical, chemical, and biological processes affect the mobility and behavior of liquid- (or pure-) phase and vapor-phase contaminants in the unsaturated zone and dissolved- or pure-phase contaminants in the saturated zone. These processes can generally be classified into two categories: nondestructive and destructive.

Nondestructive Processes. Nondestructive processes primarily affect contaminant mobility and behavior, but do not alter the chemical composition of the contaminant. Nondestructive processes include sorption, dispersion, volatilization, dissolution, and dilution.

- Sorption is the chemical bonding of contaminants to soil particles, which slows the rate of soil vapor and pure-phase contaminant migration in the unsaturated zone and the rate of dissolved- and pure-phase contaminant migration in the saturated zone. Sorption effects are directly related to soil organic carbon content and contaminant molecule characteristics, often greater in zones with silt and organic matter. This process is very likely more active in the siltier zones beneath the Site (e.g., the Intermediate B Zone beneath the Property);

- Dispersion is the longitudinal and transverse spreading of contaminants as they move through a porous media. Dispersion spreads out the contaminant plume, which slows the migration rate and decreases the contaminant concentration of the plume boundary. Dispersion occurs when variations in soil pore size, pore "roughness," and particle flow path length result in different advective transport rates for contaminants. Dispersion is most significant in stratified soil zones and may also be significant in siltier portions of an aquifer. Its effects increase with flow path length. A narrow, high concentration plume near the source area will become a broad, low concentration plume several hundred feet from the source area. Dispersion is likely active at and downgradient of the Property due to the interbedded nature of the Intermediate A and B Zones beneath the Property. The effects of dispersion on the spread of the VOC plume, however, are likely impacted by groundwater extraction activities in the area;

- Volatilization occurs when contaminants in the unsaturated soil or dissolved-phase contaminants in groundwater transfer into the vapor-phase in unsaturated soil. Volatilization from groundwater occurs only at the water table. Volatilization rates depend on the relative volatility of the contaminant (PCE is moderately volatile, while vinyl chloride is highly volatile); based on nature of the contaminants and the presence of detectable CVOCs in the soil vapor samples, it can be concluded that volatilization is occurring at the Site;

- Dissolution occurs when pure-phase contaminants transfer into the dissolved-phase in soil pore water above the water table or into groundwater below the water table, and when vapor-phase contaminants transfer into groundwater at the water table. This process depends on the relative solubility of the contaminant (PCE is moderately soluble, while vinyl chloride is highly soluble). Based on the elevated and persistent soil and

groundwater CVOC concentrations, dense non-aqueous phase liquid ("DNAPL") is likely present beneath the former PCE source areas at the Property (near the former western boiler room and the sewer line located near the former loading dock just east of former Building C). DNAPL, where present, would likely exist as disseminated residuals, blobs, and ganglia (see Section 7.2.2) in the finer-grained units beneath the Property. Any remaining DNAPL would serve as a source to dissolved-phase CVOCs in groundwater; and

- Dilution occurs from natural or artificial sources when surface water infiltration or groundwater flow mixes with contaminated groundwater resulting in lower contaminant concentrations.

The nondestructive processes described above are likely active at the Site. Historical desorption of VOCs from soil in the source areas, continued desorption of VOCs from secondary sources (fine-grained soil), and dissolution of DNAPL in the saturated zone likely generate most of the dissolved VOCs in groundwater at the Site.

Destructive Processes. Destructive processes either destroy the contaminant or alter the chemical behavior, resulting in effective decreases in contaminant concentration. Destructive processes are either biotic (process due to a living organism, such as biodegradation) or abiotic (process not related to a living organism). Biodegradation includes all microbial activity occurring in the subsurface that permanently destroys contaminants. Abiotic processes include various chemical reactions, primarily hydrolysis, that destroys contaminants. Biodegradation processes are generally much more significant than abiotic processes; thus, only the biodegradation processes are discussed.

Microbial metabolic degradation of petroleum hydrocarbons occurs under both aerobic and anaerobic conditions, with aerobic biodegradation occurring preferentially. Dissolved oxygen, nitrate, sulfate, manganese, and iron-oxides serve as oxidants (electron acceptors) to facilitate biodegradation. For BTEX components, ethylbenzene and xylenes will be metabolized before toluene, with benzene being biodegraded last. Anaerobic biodegradation can end up responsible for the bulk of biodegradation of petroleum hydrocarbons due to the typically higher amounts of sulfate, manganese, and iron-oxide electron acceptors in most aquifers.

Microbial metabolic degradation of PCE occurs under both aerobic and anaerobic conditions. Aerobic metabolism includes direct oxidation of CVOCs as an energy source, and fortuitous degradation of CVOCs (co-metabolism) during metabolism of other organic compounds. Under anaerobic conditions, CVOCs are degraded by reductive dechlorination (the sequential removal of chlorine atoms from a CVOC molecule).

Anaerobic reductive dechlorination is defined as the degradation of a compound in the absence of oxygen. Bacterial metabolism under anaerobic conditions requires both electron acceptor and electron donor compounds. Electron donors (primary energy sources or substrates) include organic compounds such as readily degradable sugars, volatile fatty acids (e.g., acetate, lactate), naturally occurring organic matter, and alcohols, or longer chain aliphatic and aromatic hydrocarbons (petroleum fuels). Under anaerobic conditions, electron acceptors include (in order of decreasing metabolic energy yield) nitrate, manganese (V), iron (III), sulfate, and carbon

dioxide. During anaerobic reductive dechlorination, CVOCs (i.e., PCE, TCE, cDCE, tDCE, and vinyl chloride) may increasingly serve as an electron acceptor, particularly as the naturally occurring electron acceptors are consumed by microbial metabolism. Degradation of both petroleum hydrocarbons and CVOCs may occur simultaneously during reductive dechlorination. Anaerobic reductive dechlorination is most favorable under methanogenic conditions. Anaerobic reductive dechlorination efficiency decreases as chlorine atoms are removed, PCE is most readily degraded, and vinyl chloride is the most recalcitrant. Vinyl chloride, however, may be degraded aerobically with oxygen as an electron acceptor, or co-metabolically under aerobic conditions in the presence of methane and the Fe^{3+} ion.

Although a detailed evaluation of biodegradation has not been performed at the Site, the natural attenuation screening (Section 6.3.3.3) and presence of breakdown products (TCE, cDCE, and VC) indicate that anaerobic biodegradation is occurring at the Site. Biodegradation (including enhanced biodegradation from the preliminary pilot tests, Section 5.1.3) has evidently contributed to destruction of contaminants in the subsurface, but because of the high source area concentrations, downward hydraulic gradient, relatively high groundwater flow rate, and changing groundwater flow regimes caused by groundwater extraction in the vicinity, biodegradation has not been sufficient to attenuate contaminants to levels below screening levels before they are transported downgradient.

7.2.2 Migration Mechanisms and Pathways

Residual contaminants residing in saturated and unsaturated soil may be further mobilized by flow of water or air in the subsurface.

Unsaturated Soil. Most of the contamination in the unsaturated soil and shallow saturated soil (to approximately 40 feet bgs) was treated by the ERH/SVE independent action performed at the Property (Figure 6) in 2013. The processes that affected migration of VOCs in the unsaturated zone before the independent action was performed and in limited areas post-treatment are discussed below. These processes are of less significance since the independent action was conducted.

- **Pure Phase Flow.** When a release of a VOC product occurs in the subsurface, the product moves downward through the unsaturated soil as a non-aqueous phase liquid ("NAPL") under the force of gravity, including both DNAPL and light, non-aqueous phase liquid ("LNAPL"). Geologic heterogeneities control the amount of lateral spreading that occurs during the downward movement of NAPL. Small NAPL releases may not have sufficient volume to reach the water table, as NAPL is trapped in the vadose zone soil pores. If the release is large enough, the NAPL may eventually reach the water table and the saturated zone. LNAPL can accumulate and spread along the water table. The resulting distribution of LNAPL is dependent on the soil properties, the LNAPL properties, and the volume of LNAPL released. DNAPL will continue to move downward as described in the saturated soil discussion below. Pure-phase flow was probably the primary initial contaminant migration route for PCE in the former dry cleaning area and petroleum hydrocarbons in the fuel storage and distribution area. Because product and waste handling activities ceased at the Property in the 1990s and the last fuel UST was removed in 1985, it is likely that all pure-phase VOCs originally

released into the unsaturated zone have migrated into the saturated zone or adsorbed onto unsaturated soil. Therefore, pure-phase migration in the unsaturated soil is not considered a current migration pathway.

- **Leaching from Unsaturated Soil to Groundwater.** This process includes infiltration of natural precipitation through unsaturated soil, dissolution of pure-phase contaminants or flushing of soil pore water contaminants into the water, and transport of the contaminants to the saturated zone (groundwater). While likely an active contaminant migration pathway when the former dry cleaning and fueling activities were occurring, this process is not considered a significant migration pathway at the Property due to the passage of time, and because the unsaturated soil near most of the potential VOC sources has been treated by the 2013 independent action.

- **Diffusion.** Diffusion is driven by chemical concentration gradients and is the primary mechanism for vapor transport in unsaturated soil where soil vapor is usually stagnant. Diffusion may be an active contaminant migration pathway in locations with VOCs remaining in the unsaturated zone.

- **Volatilization.** Volatilization occurs when pure-phase contaminants in the unsaturated soil or dissolved-phase contaminants in groundwater transfer into the vapor-phase in unsaturated soil. Volatilization from groundwater occurs only at the water table, and volatilization rates depend on the relative volatility of the contaminant (PCE is moderately volatile, while VC is highly volatile). To the degree that pure-phase contaminants remain in the vadose zone and VOCs are present at the water table, volatilization is an active process at the property.

Saturated Soil. As discussed above, LNAPL can accumulate and spread along the water table. If the NAPL has a density greater than water, referred to as DNAPL, it will continue to move downward, in a typically tortuous fashion along multiple flow paths, with downward movement controlled by the pore size distribution and bedding of the geologic unit. As DNAPL moves through the subsurface, disconnected blobs and ganglia are left behind the trailing edge of the DNAPL, effectively diminishing the migrating mass. The blobs and ganglia are small (less than 10 grain diameters in length) and occupy between approximately 5 to 20 percent of the invaded pore space behind the DNAPL body (Kueper et al., 2003). Downward DNAPL movement will continue until the mass of DNAPL is exhausted or a soil layer fine enough to stop the DNAPL is encountered. In the latter case, the DNAPL will pool and spread laterally. DNAPL in a pool is connected between adjacent pores; pore space in DNAPL pools can be up to 70 percent saturated with DNAPL (Kueper et al., 2003). Portions of a site containing DNAPL pools and/or residual DNAPL (blobs and ganglia) are termed the DNAPL source zone.

As groundwater moves through the DNAPL source zone, a plume of dissolved contaminants is generated; soluble constituents partition into groundwater dictated by the effective solubility of the solvent mixture or petroleum hydrocarbon components. Dissolved contaminants then migrate by advection with groundwater. Volatile constituents from groundwater partition into the unsaturated zone vapor phase and migrate in soil vapor. Over time, the DNAPL remaining in the subsurface weathers as volatile and soluble components are depleted from NAPL interfaces, with residual NAPL continuing to be a source of contaminants to both groundwater and soil

vapor. According to Kueper et al. (2003), the lifespan of residual DNAPL in the unsaturated zone is considerably shorter than residual DNAPL in the saturated zone due to high unsaturated zone volatilization rates.

Elevated soil and groundwater CVOC concentrations and the persistence of CVOC contamination in the Intermediate A and upper portions of the Intermediate B Zones beneath the Property indicate that DNAPL may be present beneath the former PCE source areas at the Property. If so, the DNAPL would likely be present as disseminated residuals, blobs, and ganglia (rather than extensive pooled accumulations) in the finer-grained units outside and beneath the volume of the subsurface treated by the 2013 independent action at the Property. Any DNAPL present in the subsurface would be subject to the migration mechanisms described above, including dissolution, advective CVOC transport, and volatilization of CVOCs into the unsaturated zone vapor phase at the water table. Additional processes affecting migration of CVOCs include retardation and biodegradation, which serve to slow the CVOC migration rate and degrade the concentrations of CVOCs migrating outside of the Property. The effects of these processes on CVOC migration outside of the Property will be evaluated during the RI.

7.3 Current and Future Land and Water Use

The Property is currently zoned for mixed use (Seattle Mixed South Lake Union 175/85-280). Based on the current redevelopment of the area, the future land use at the Property is reasonably expected to remain mixed use. Based on the mixed use zoning code, a wide variety of light industrial, residential, and commercial uses are allowed, including daycare centers. Therefore, potential receptors at the Site currently and in the future are light industrial workers, workers and patrons of commercial and retail facilities, and area residents.

Groundwater at the Site is not currently used for drinking water but consumption of groundwater remains a future potential exposure pathway. As discussed in Section 3.4.1, Ecology has designated surface water in Lake Union to be protected for a wide range of uses, including domestic, industrial, and agricultural water supply. For the purpose of preparing this preliminary conceptual site model, use of surface water in Lake Union for drinking water is considered the most protective of potential exposure pathways.

7.4 Exposure Pathways and Receptors

Based on the previous investigation results and current and future land and water uses discussed above, the following potentially complete exposure pathways and receptors are included in the Conceptual Site Model and are shown on Figure 39. The exposure pathways and receptors will be reevaluated, and the CSM revised as necessary, during the RI.

7.4.1 Soil Pathway

Potential exposure pathways for soil contamination include the following:

- Direct contact pathway, which comprises direct contact with and/or ingestion of the contaminated soil beneath the Site;
- Leaching pathway, which includes the leaching of contaminants in soil (unsaturated and saturated) to groundwater such that groundwater becomes contaminated; and

- Volatilization of contaminants to soil vapor and subsequent migration to indoor air (see Section 7.4.3).

Most of the Site (other than the Property) is currently covered with pavement or buildings, which limits direct contact and minimizes soil leaching from the unsaturated zone. Except for the Property and the other properties with known releases described in Section 7.1, known contaminated soil at the Site is present at depths (greater than 15 feet bgs) that make direct contact by building occupants and site workers unlikely. However, there is the potential that human receptors (site workers) could be exposed to contaminants present in soil at the Site and immediately adjacent to the Property via direct contact (and potential incidental ingestion) during future redevelopment and/or subsurface maintenance and construction activities. Leaching from contaminated soil within the saturated zone to groundwater is a complete pathway at the Site. Exposure of ecological receptors to Site-related contaminants does not appear to be a complete exposure pathway. Given the highly developed nature of the South Lake Union area, including the buildings and pavement covering most of the Site, the commercial/industrial use of the property and surrounding area, and the depth of known contaminated soil (greater than 15 feet bgs) in the area outside the Property, terrestrial ecological exposure to the soil is unlikely. However, the evaluation of potential terrestrial ecological receptors will be deferred until the RI is completed as the extent of contamination will have been defined.

7.4.2 Groundwater Pathway

There are no known active water supply wells located on or downgradient of the Property. However, future use of deeper aquifers downgradient of the Site cannot be ruled out. Therefore, while not a current exposure pathway, ingestion of contaminated groundwater is a potential future exposure pathway.

7.4.3 Soil Vapor Pathway

The vapor intrusion pathway includes the volatilization of Site contaminants in unsaturated zone soil and shallow groundwater to soil vapor and subsequent migration into indoor air. This is a potentially complete pathway for the Site. Based on the limited soil vapor sampling conducted on the east side of 8th Avenue North, it appears that there currently is not a vapor intrusion risk for human health for portions of the Site outside of the Property. However, due to the limited extent of the data collected to date, the vapor intrusion pathway will be considered a potential current and future exposure pathway. Additional vapor intrusion evaluations will be completed during the RI.

7.4.4 Surface Water Pathway

The nearest potential aquatic receptor of contaminated groundwater is the southern end of Lake Union. The limited data collected to date in the wells closest to the lake (SMW-3, MW-214, and MW123) indicate that discharge of contaminated groundwater to the lake is unlikely. However, given the limited extent of the data collected to date, the groundwater to surface water pathway will be considered a potential current and future exposure pathway. Additional evaluations will be completed during the RI.

8.0 DATA GAPS

The investigations conducted at the Site in 2017 and 2018 addressed the Property-specific data gaps and partially addressed the Site-wide data gaps that were identified by Ecology (2015b) and PES (Table 4). Following is a summary of the data gaps outside of the Property that will be addressed by the RI/FS:

1. **Definition of the Lateral and Vertical Extent of the Site CVOC Groundwater Plume and CVOCs in Site Soil.** The lateral and vertical extent of groundwater exceeding the screening levels has not been fully defined. The lateral extent of shallow, intermediate, and deep groundwater exceeding the screening levels has not been defined to the southwest, south, and east of the Property, with additional data needed to confirm groundwater CVOC concentrations immediately north of the Property in the Shallow Zone and immediately west of the Property in the Intermediate A, Intermediate B, and Deep Zones. Additional soil and groundwater data are needed to confirm the lateral and vertical extent of CVOC concentrations exceeding the screening levels outside of the Property.

2. **Collection of Seasonal Groundwater Elevation Data.** Groundwater levels have not been monitored systematically over a seasonal cycle in most wells at the Site or any in the Intermediate B Zone. Consistent data over one cycle are required to evaluate the variability of vadose zone thickness, groundwater flow direction, and groundwater flow rate.

3. **Collection of Seasonal Groundwater Quality Data.** Groundwater quality data have not been collected systematically over a seasonal cycle, with some wells sampled only twice. Consistent data over one cycle are required to evaluate the variability of CVOC concentrations over a season and to provide sufficient data for determining indicator hazardous substances.

4. **Collection of Additional Hydraulic Conductivity Data.** Additional data are required to evaluate the hydraulic conductivities of the range of lithologies present across the Site. The data are needed to allow evaluation of contaminant fate and transport and to support the development of final cleanup actions.

5. **Collection of Additional Lithology Data.** Additional lithology data are required to improve the understanding of geologic materials present under the Site and provide updated geologic cross sections and an updated conceptual site model.

6. **Collection of Transport and Remediation Parameter Data.** Transport and remediation parameters (e.g., f_{oc}) are needed to facilitate contaminant fate and transport evaluation and the evaluation of interim and final cleanup actions.

7. **Investigation of the Groundwater to Surface Water Pathway.** The likelihood of groundwater that contains CVOCs above the screening levels reaching Lake Union has not been evaluated.

8. **Presentation and Transmittal to Ecology of the Geochemical Parameter Data.** Geochemical parameter data collected in the past were not provided to Ecology in a complete tabulated format and were not provided to Ecology's Environmental Information Management ("EIM") database.

9. **Preparation of a Groundwater Monitoring Plan Assessing the Stability of the CVOC Plume.** Previous work at the Site did not assess plume stability with a presentation of geochemical data on maps.

10. **Demonstration of How Cleanup Levels Will Be Met through the Intermediate and Deep Aquifers.** With a focus on cleanup of the Shallow Zone and the upper part of the Intermediate Zone, previous work at the Site did not adequately address cleanup of the deeper water-bearing zones.

11. **Completion of the Vapor Intrusion Evaluation.** The evaluation of the vapor intrusion pathway is incomplete and requires additional investigation to characterize the risk of vapor intrusion within the Site consistent with Ecology's vapor intrusion guidance. As indicated previously, soil vapor sampling to date has been limited to the three soil vapor monitoring points located across 8th Avenue North from the Property, and the extent of CVOCs in shallow groundwater within Site has not been fully delineated (i.e., near the presumed edges of the shallow CVOC plume to the southwest of the Property, in the alley between 8th and 9th Avenues North, and in 9th Avenue North). Additional shallow groundwater data are required to identify the area(s) where there is the potential for vapor intrusion. Based on that information, additional soil vapor sampling data may be required to further assess vapor intrusion risks consistent with Ecology's guidance.

9.0 REMEDIAL INVESTIGATION

This section discusses the proposed RI scope of work, including the objectives of the RI, the rationale and approach to RI implementation, and an outline of the RI scope of work. Field and laboratory procedures are discussed in the Sampling and Analysis Plan ("SAP") provided in Appendix F. The quality assurance and quality control ("QA/QC") procedures discussed in the Interim Action Work Plan Quality Assurance Project Plan ("QAPP"; PES, 2018) will be used. The Interim Action Work Plan Health and Safety Plan ("HASP"; PES, 2018) will be used for the RI field work.

9.1 Remedial Investigation Objectives

The investigation objectives will be to collect sufficient data to fill the data gaps, identify indicator hazardous substances ("IHSs"), and provide enough information to select a cleanup action (WAC 173-340-350(1)).

9.2 Remedial Investigation Approach

The approach to complete the RI will be to: (1) drill and collect soil and groundwater samples from monitoring wells located in areas outside the Property where additional data are needed to define the extent of soil above screening levels, confirm groundwater flow and quality, and define the lateral and vertical extent of CVOCs above screening levels; (2) pair new wells with existing wells if possible to allow vertical profiling of CVOCs; (3) compare the shallow groundwater data to Ecology's vapor intrusion screening levels to delineate the areas at risk for vapor intrusion, and install and sample additional soil vapor probes at key locations (i.e., near existing buildings/structures that could be affected); (4) analyze all samples for constituents handled at the Property (primarily VOCs); (5) use existing monitoring points where possible for continued monitoring; and (6) coordinate RI monitoring events with interim action performance monitoring to the extent possible.

The approach to conducting the RI described in this work plan is intended to be results driven, where additional work if required is based on the results of the previous phase of work. PES has proposed additional data collection activities intended to fill the data gaps described above and summarized in Table 4. If investigation results received during implementation of the proposed RI scope of work indicate that further work is required to meet the RI objectives or resolve the data gaps (i.e., additional wells, vapor probes, or data collection efforts required beyond those proposed in this work plan), PES will develop a supplement to this work plan to describe the proposed additional scope of work and will submit it to Ecology for review and approval.

9.3 Remedial Investigation Scope of Work

Following is a summary of the scope of work that PES will implement on behalf of BMRD. The proposed RI will include monitoring well installation, soil sampling and analysis, hydraulic conductivity testing, groundwater level measurement, groundwater sampling and analysis, and soil vapor sampling and analysis. Table 4 summarizes which exploration locations will be used to address each data gap, and Table 19 provides a summary of the proposed monitoring wells, the rationale for each monitoring location, the planned depth of the exploration, and the planned parameters to be analyzed. Figures 36 through 39 show the 2019 PCE, TCE, cDCE, and VC

concentrations on Shallow, Intermediate A, Intermediate B, and Deep Zone plan views, respectively, with locations of the proposed monitoring wells shown. Figures 25 through 33 depict the 2019 PCE, TCE, cDCE, and VC concentrations and proposed monitoring wells on Cross Sections A-A' through I-I', showing how the proposed wells will assist the evaluation of the vertical extent of CVOCs across the Site.

9.3.1 Monitoring Well Drilling and Soil Sampling

9.3.1.1 Locations

Thirty monitoring wells will be drilled and installed outside of the Property. Wells were located in public ROWs to minimize the need for private access agreements. Six Shallow Zone, eight Intermediate A Zone, eight Intermediate B Zone, and eight Deep Zone wells will be installed as follows:

- Shallow Zone: MW-301, MW-305, MW-310, MW-312, MW-313, and MW-320 (Figure 34);
- Intermediate A Zone: MW-302, MW-306, MW-308, MW-315, MW-317, MW-321, MW-325, and MW-327 (Figure 35);
- Intermediate B Zone: MW-303, MW-307, MW-309, MW-311, MW-314, MW-316, MW-318, and MW-322 (Figure 36); and
- Deep Zone: MW-304, MW-319, MW-323, MW-324, MW-326, MW-328, MW-329, and MW-330 (Figure 37).

If any well cannot be installed in the planned location (e.g., due to the presence of subsurface utilities), PES will attempt to install it as close to the planned location as possible. If that is not possible, PES will confer with Ecology about alternate locations and timing of the replacement well installation. Since an Intermediate A Zone well (FMW-142) was recently installed across 9th Avenue North from the planned location of Intermediate A Zone well MW-321, installation of that well will be put on hold until the first round of groundwater monitoring (water levels and groundwater samples) has been conducted. After those results have been evaluated, a decision on the need for MW-321 will be made in consultation with Ecology.

9.3.1.2 Permitting

Prior to any work in the ROW, PES will apply for and procure any necessary permits from the Seattle Department of Transportation, including short-term use truck permits, short-term hooded meter permits, and longer-term street use permits. PES will prepare the applications, coordinate the preparation of the traffic control plans, submit the application packages to the City, and coordinate with the City about allowed work areas, work periods, and work times, and adjacent property owner notifications. The City processing time for ROW permits can be as long as three months and is currently between eight and ten weeks. PES will also coordinate the work schedule with the South Lake Union Hub Coordinator, which may limit when specific work can be conducted. If additional wells need to be installed on private property in the future, BMRD will negotiate an access agreement with the property owner to allow installation and monitoring of the well.

9.3.1.3 Soil Sampling Methods and Well Installation

The monitoring well borings will be drilled and sampled using a sonic drilling rig, with soil samples collected continuously during drilling. The soil samples will be used for lithologic identification, field screening for evidence of contamination, and soil sample collection for laboratory analysis. Table 19 provides the rationale for each monitoring well, the approximate proposed well screen depths and elevations, and the proposed number of soil samples to be collected in each monitoring well boring during drilling. In general, soil samples will be collected for laboratory analysis in the deepest boring at each location, with samples collected every 5 feet starting at a depth of 5 feet bgs. Monitoring wells will consist of 2-inch-diameter PVC with 10-foot long well screens. Wells will be developed by repeated surging (with a surge block or bailer) and pumping until the color of the discharge water does not change with additional development.

9.3.1.4 Soil Laboratory Analyses

Table 19 describes the laboratory analyses to be performed on soil samples collected in each monitoring well boring. All soil samples will be collected consistent with EPA Method 5035 and submitted to the laboratory for VOC analysis using EPA Method 8260. At least one soil sample from each monitoring well boring will be analyzed for grain size, with the intention of documenting the lithologic type and provide data for hydraulic conductivity evaluation for the range of soil types across the Site. If a sufficiently thick layer of fine-grained soil (sandy silt or finer) is encountered, at least one undisturbed soil sample will be collected for laboratory analysis of vertical hydraulic conductivity, if possible. Soil samples will also be collected for laboratory analysis of dry bulk density and fraction organic carbon (f_{oc}).

Details of the soil sampling procedures, well development procedures, and laboratory analyses are provided in the SAP (Appendix F).

9.3.2 Hydraulic Conductivity Testing

PES will submit soil samples from monitoring well borings for laboratory analysis of grain size. The Kozeny-Carman Equation (Payne et al, 2008) will be used with the grain size data to estimate the hydraulic conductivity of the sampled material. If a sufficiently thick layer of fine-grained soil (sandy silt or finer) is encountered, at least one undisturbed soil sample will be collected for laboratory analysis of vertical hydraulic conductivity.

Rising head slug tests will be conducted in up to eight monitoring wells. The wells will be selected after the new wells have been installed, developed, and sampled for the first time. The wells will be selected to complement the previous slug tests and provide analyses in representative areas around the Site and in wells with different lithologies, if possible.

9.3.3 Groundwater Level Monitoring

Table 20 and Figure 40 present the monitoring well network to be used to evaluate the seasonal and construction-related variability in groundwater elevations at the Site. The RI water level monitoring network includes the interim action performance monitoring wells located outside of the Property. Groundwater levels will be measured in each well in the network during four

quarterly water level monitoring events over a one year period. Additionally, transducers will be installed in selected monitoring wells and continuously monitored throughout the RI monitoring year. The wells to be instrumented include Shallow Zone wells MW-155 and MW-320; Intermediate A Zone wells MW109, MW-306, MW-308, MW-325, and MW-327; Intermediate B Zone wells MW126, MW-143, MW-307, MW-316, and MW-322; and Deep Zone wells MW124, MW-153, MW-160, MW-319, MW-324, MW-326, and MW-328. These wells were selected to represent each of the four water-bearing zones across the Site, with less emphasis on the Shallow Zone since the shallow groundwater flow direction has been consistently eastward in the past.

9.3.4 Groundwater Quality Monitoring

Groundwater samples will be collected for laboratory analysis from each well in the monitoring network during four quarterly events over a one year period. The analytical results will be used to determine the extent of groundwater contamination, to document the seasonal variability of groundwater quality across the Site, and to provide data for use in the feasibility study.

9.3.4.1 Monitoring Well Network

Table 20 and Figure 40 present the monitoring well network to be used to evaluate groundwater quality at the Site. The RI groundwater quality monitoring network includes:

1. The interim action performance monitoring wells located outside of the Property;
2. The RI wells outlined in Section 9.3.1.1;
3. Additional existing wells outside of the Property that have not been used for interim action performance monitoring (e.g., MW123 and MW128); and
4. Five wells recently installed by Farallon in the alley, on the east side of 9th Avenue North, and on the south side of Mercer Street (FMW-137 and FMW-140 through FMW-143).

The 94 wells in the network include 21 Shallow Zone monitoring wells, 25 Intermediate A Zone monitoring wells, 20 Intermediate B Zone monitoring wells, and 28 Deep Zone monitoring wells.

9.3.4.2 Sampling Methods

Groundwater samples will be collected with a peristaltic pump for wells with water levels less than 20 feet bgs and with a bladder pump for wells with water levels deeper than 20 feet bgs. Low-flow sampling methods will be used to purge the wells and collect the samples. The SAP (Appendix F) provides details of the sampling procedures.

9.3.4.3 Laboratory Analyses

Table 20 describes the laboratory analyses to be performed on groundwater samples collected in each monitoring well. All groundwater samples will be analyzed for VOCs using EPA Method 8260, and groundwater samples collected from wells located near historical petroleum hydrocarbon sources (conservatively, from wells located near the Property) will also be analyzed

for GRO using Ecology Method NWTPH-Gx. Groundwater samples collected from a sufficient number of wells to represent the geochemical conditions throughout the plume will also be submitted for laboratory analysis of MNA parameters. After the results of the first sampling event have been reviewed, BMRD may propose to Ecology that the number of wells with GRO and geochemical parameters analyses be reduced during the remainder of the RI. The reduction would be proposed if it would serve to focus the data collection efforts on areas within and near the VOC plume, or to focus on wells along representative flowpaths through the plume. The SAP (Appendix F) presents the analytical methods, and the IAWP QAPP (PES, 2018) provides the QA/QC procedures.

9.3.5 Vapor Intrusion Assessment and Soil Vapor Sampling

Site characterization under Ecology's vapor intrusion guidance (Ecology, 2016b and 2018a) includes three steps: a preliminary assessment, a Tier I assessment, and a Tier II assessment. The preliminary assessment evaluates the types of chemicals at the Site and the locations of existing and potential future buildings to determine if buildings are close enough to potential sources to require further evaluation. If so, a Tier I assessment is conducted to collect shallow groundwater and/or soil vapor data, and if those data are above screening levels, run a model to predict indoor air concentrations. If a weight-of-evidence evaluation indicates the potential for unacceptable indoor air concentrations, a Tier II assessment is required that may include sampling of sub-slab soil vapor, indoor air, and ambient air. Tier I data collection at the Site to date has included shallow groundwater sampling and limited soil vapor sampling.

The vapor intrusion assessment for the Site will be conducted during several iterations of field investigations. As described in Sections 9.3.1 and 9.3.4, the initial investigation includes installing additional shallow monitoring wells and collecting and analyzing shallow groundwater samples to characterize the concentrations of CVOCs in shallow groundwater across the Site. The CVOC data from the initial round of Site-wide groundwater sampling will be compared to the groundwater vapor intrusion screening levels presented in Table 9 to identify the areas where there is a potential risk of vapor intrusion. Based on this data, PES will prepare a supplement to this work plan to describe soil vapor sampling to further evaluate the potential for vapor intrusion. The soil vapor sampling work plan supplement will include the following:

- A map showing the location of the shallow monitoring well network and the groundwater monitoring results for VOCs that exceed their respective vapor intrusion screening levels. The area or areas where groundwater concentrations exceeding the screening levels will be shown on the map;
- A map showing the locations of existing buildings in and within 100 feet of the area with shallow groundwater exceeding the vapor intrusion screening levels;
- A table summarizing the key construction details of the identified buildings including the type of construction, presence of basements or subgrade parking, and general use;
- Proposed locations of soil vapor monitoring probes to assess subsurface soil vapor as it relates to the identified buildings;
- Soil vapor monitoring probe construction details including depths and materials of construction; and

- Sampling frequency and analytical methods.

Soil vapor samples are being collected quarterly from existing soil vapor monitoring probes SV01, SV02, and SV03 consistent with the Final IAWP. This quarterly soil vapor sampling will continue and be incorporated into the vapor intrusion assessment described above. The following describes the scope of the ongoing soil vapor monitoring that will be modified once the results of the shallow groundwater sampling have been obtained and the soil vapor sampling work plan supplement has been approved by Ecology.

9.3.5.1 Sampling Methods

The sampling method for soil vapor probes (including existing and new ones) is described in the SAP (Appendix F) . The methods use equipment and procedures to ensure that the sample collected is representative of soil vapor at the monitored location. The equipment includes a surface leak detection cowl/shroud, a sampling train with valves and sampling ports to allow for leak detection sampling, and Summa canister to collect the sample. A shut-in test will be performed, and the monitoring probes will be purged at low rates to reduce the chance of ambient air infiltration during sample collection.

9.3.5.1 Laboratory Analyses

The soil vapor samples collected in the Summa canisters will be analyzed for VOCs using EPA Method TO-15. The SAP (Appendix F) presents the analytical methods, and the IAWP QAPP (PES, 2018) provides the QA/QC procedures.

9.3.6 Data Evaluation and Interim Reporting

Since the RI is an iterative process, data generated during the RI will be reviewed, tabulated, and evaluated as it is generated. As discussed in the previous section, the first round of shallow RI groundwater and soil vapor data will be incorporated in a supplement to this work plan to describe soil vapor sampling to further evaluate the potential for vapor intrusion. The vapor intrusion work plan supplement will be submitted to Ecology for review.

The Site Studio model (see IAWP, PES, 2018) will be updated as will the maps and cross sections depicting the RI data. The conceptual site model will be updated, as necessary, and the updated model and presentations will be used to determine if additional monitoring or data collection is needed. If needed, a work plan supplement for additional work will be prepared and submitted to Ecology for review. When the data collection activities are believed to be sufficient to conduct an FS (generally, when the extent of contamination has been determined, seasonal data have been collected, and any Tier II vapor intrusion assessments have been completed), a technical memorandum (preceding an RI report) will be prepared that provides an updated conceptual site model, updated figures depicting the extent of contamination in soil and groundwater, and summary data tables. The technical memorandum will be submitted for Ecology review and comment, and if Ecology concurs that the FS can proceed , transitional RI/FS tasks will be initiated, including preliminary IHS selection, cleanup level development, and terrestrial ecological evaluation to be included in the Agency Review Draft FS.

10.0 FEASIBILITY STUDY

A feasibility study will be conducted to develop and evaluate cleanup action alternatives that will support the selection of a preferred cleanup alternative for the Site (WAC 173-340-350(8)(a)). This section discusses the components of the feasibility study that will be performed, including identifying the media requiring cleanup, defining the cleanup action objectives ("CAOs"), listing applicable or relevant and appropriate requirements ("ARARs"), identification and screening of remedial technologies, development and screening of cleanup action alternatives ("CAAs"), evaluation of CAAs, and selection of the preferred CAA. Figures will include vicinity and Site maps, selected data summary figures from the RI, the conceptual site model, and figures supporting the CAAs. Tables will include summaries of ARARs, CAA evaluation, and CAA costs.

10.1 Cleanup Standards

The screening levels presented in Section 6.3.1 will be refined during the FS to develop cleanup standards. Cleanup standards consist of cleanup levels and points of compliance, which are the locations at the Site where cleanup levels need to be met. Depending on the cleanup actions being considered, remediation levels may also be developed. Cleanup levels will be developed that are protective of human health and the environment in media with identified IHSs. IHSs will be determined by comparing the frequency of detection and concentrations of the constituents detected in the RI to potential cleanup levels protective of the various receptors in the contaminated media.

10.2 Media Requiring Cleanup

The data generated during previous Site investigations and various phases of the RI will be compared to the cleanup levels to determine media and areas of the Site requiring cleanup. This information will be used to develop cleanup objectives and direct remedial technology screening and cleanup action alternative ("CAA") development.

10.3 Cleanup Action Objectives

The CAOs for the Site include the following:

1. Protect potential current and future receptors against vapor intrusion;
2. Protect sediment and surface water in Lake Union;
3. Protect groundwater as a source of drinking water;
4. Prevent further migration of the contaminant plume;
5. Manage contaminated groundwater during construction dewatering in the area; and
6. Ensure off-Property impacted areas meet applicable cleanup standards within a reasonable restoration timeframe.

These CAOs may be refined as necessary during the FS based on exposure pathways, receptors, current land use, and future land use discussed in Section 7 for the RI work plan.

10.4 Applicable or Relevant and Appropriate Requirements

WAC 173-340-710 requires that all MTCA cleanup actions comply with applicable state and federal laws. Applicable requirements include those cleanup standards or requirements for a hazardous substance adopted under state or federal law. As stated in WAC 173-340-710(4), "relevant and appropriate requirements include those cleanup standards, standards of control, and other environmental requirements, criteria, or limitations established under state or federal law that, while not legally applicable to the hazardous substance, cleanup action, location, or other circumstance 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 FS will determine the ARARs specific to the cleanup alternatives being considered. Besides MTCA, potential ARARs could include the following:

- Washington Ground Water Quality Standards (WAC 173-201) establish standards to protect groundwater quality (e.g., maximum contaminant levels) and beneficial uses;
- Washington Water Pollution Control Act (RCW 90.48) and its regulations address the requirement under Sections 301, 302, and 303 of the Federal Clean Water Act (CWA, 33 USC § 1251 et seq.) and the following implementing regulations:
  - Washington Surface Water Quality Standards (WAC 173-201A) are applicable to surface waters of the state, are protective of aquatic life and other beneficial uses, and can be applicable if an alternative includes discharge of treated water is needed;
  - Washington Sediment Management Standards (WAC 173-204) establish standards for the quality of surface sediments and a management and decision process for the cleanup of contaminated sediments in an effort to eliminate adverse effects on biological resources and protect humans from surface sediment contamination; and
  - Washington State NPDES Program Regulations (WAC 173-220) would be applicable for discharge to surface waters under an NPDES permit.
- Washington Dangerous Waste Regulations (WAC 173-303) establish procedures and standards related to the definition, management, and disposal of dangerous wastes;
- Washington Clean Air Act Regulations (WAC 173-400) provide standards and procedures for managing the discharge of contaminants to the atmosphere;
- The Endangered Species Act (ESA; 16 USC § 1531 et seq.) ensures that the actions that federal agencies authorize, fund, or carry out do not jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse impact of designated critical habitat;
- Washington State Environmental Policy Act (SEPA; RCW 43.21c) requires state agencies to analyze the impacts of proposals for legislation and other actions that might significantly affect the quality of the environment; and

- Washington Water Well Construction Regulations (WAC 173-160) establish state standards for installing, maintaining, and decommissioning groundwater monitoring and recovery wells;

- Washington Industrial Safety and Health Act Regulations (WAC 296-62) contain health and safety training requirements for on-site workers. They also contain permissible exposure limits for conducting work at the Landfill.

10.5 Identification and Screening of Remedial Technologies

Remedial technologies that can potentially address, either alone or in conjunction with other technologies, one or more of the cleanup action objectives will be researched. The preliminary list of technologies will be screened, as necessary, to limit the number of technologies carried into the alternative development task to those technologies most likely to be effective at the Site.

10.6 Development and Screening of Cleanup Action Alternatives

The retained remedial technologies will be assembled into a range of CAAs with the specific intent of identifying CAAs that have a high probability of meeting Site cleanup objectives and cleanup standards. Based on the available information, it is anticipated that at least three and not more than five alternatives will be developed.

10.7 Evaluation of Cleanup Action Alternatives

The CAAs will be evaluated consistent with the MTCA criteria, which include both threshold requirements and other requirements. The first require cleanup actions to protect human health and the environment, comply with cleanup standards, comply with applicable state and federal laws, and provide for compliance monitoring. The second require that the selected cleanup action use permanent solutions to the maximum extent practicable, provide for a reasonable restoration timeframe, and consider public concerns.

To determine if a cleanup action uses permanent solutions to the maximum extent practicable, Ecology requires that a disproportionate cost analysis be conducted that compares the costs and benefits of each of the considered CAAs. In the disproportionate cost analysis, protectiveness, permanence, cost, management of short-term risks, technical and administrative implementability, and consideration of public concerns must be evaluated (WAC 173-340-360(3)(f)) to determine if an incremental increase in costs of a CA over that of a lower cost CA is justified by providing a corresponding increase in the protection of human health and the environment. The results of the comparative analysis are used in the disproportionate cost analysis to determine which CA is permanent to the maximum extent practicable. The disproportionate cost analysis process uses a qualitative evaluation of benefits and a quantitative evaluation of costs. For each criterion, each alternative will be scored on a scale of 1 to 10 based on the degree to which the alternative satisfies the MTCA description for the criterion, with 10 indicating the highest benefit provided for that criterion. Each criterion rating is multiplied by a weighting factor and the weighted criteria are summed to provide an overall benefit ranking for the alternative. Following are typical weighting factors used in this analysis, based on best professional judgment and experience:

- Protectiveness – 30 percent;
- Permanence – 25 percent;
- Long-Term Effectiveness – 20 percent;
- Management of Short-Term Risks – 10 percent;
- Implementability – 10 percent; and
- Consideration of Public Concerns – 5 percent.

No weighting is applied to cost. To complete the disproportionate cost analysis, the benefit score for each CA is divided by the estimated CAA implementation costs to yield a cost/benefit score for each CAA. The cost/benefit score is then used to evaluate the CAAs and recommend a preferred CAA to Ecology. The weighting factors and disproportionate cost analysis presentation will be discussed with Ecology during implementation of the FS.

11.0 REPORTING AND SCHEDULE

The AO provides the requirements for reporting in Section VII and the schedule of deliverables in Exhibit C. Following is a summary of the AO requirements.

11.1 Reporting

The AO requires monthly progress reports and data uploads to Ecology's EIM database. In addition, the AO requires preparation of agency review draft and public review draft RI and FS reports.

11.1.1 Progress Reports

Project progress reports will be submitted to Ecology by the 15th of each month. The progress reports will include the following:

1. A description of the actions which have been taken to comply with the AO.
2. Summaries of sampling and testing reports and other data reports received by BMRD.
3. Summaries of deviations from the approved work plan.
4. Summaries of contacts with representatives of the local community, public interest groups, press, and federal, state, or tribal governments.
5. Summaries of problems or anticipated problems in meeting the schedule or objectives set forth in the scope of work and work plan.
6. Summaries of solutions developed and implemented or planned to address any actual or anticipated problems or delays.
7. Changes in key personnel.
8. A description of work planned for the next reporting period.

11.1.2 Data Uploading to the Environmental Information Management Database

Validated data collected as part of the RI will be received within 60 days of sample collection (unless otherwise approved by Ecology) and entered in Ecology's EIM database by the end of the first full progress report period following receipt of the validated data. All data used to support a draft document will be entered in Ecology's EIM database 30 days prior to submittal of the draft document for Ecology review. All locations will include latitude, longitude, and elevation data and specify the horizontal datum and vertical datum being used.

11.1.3 Remedial Investigation and Feasibility Study Reports

At the completion of the RI, an Agency Review Draft RI Report will be prepared summarizing the RI scope of work, field activities, data analyses and evaluation, and conclusions. The Agency Review Draft RI Report will include updated geologic cross sections, groundwater elevation contour maps, and figures depicting the extent of the plume; presentation and evaluation of the data generated; an updated conceptual site model; an evaluation of cleanup levels; and an assessment of areas exceeding cleanup levels. To the extent possible, the data

generated during performance monitoring of the interim action will be included in the RI evaluation of Site-wide data. The Agency Review Draft RI Report will be submitted for Ecology review and comment; after receipt of Ecology's comments, a Public Review Draft RI Report will be prepared, and an Agency Review Draft FS report will be prepared and submitted to Ecology. The Agency Review Draft FS report will include an evaluation of points of compliance and ARARs; a summary of the remedial technologies assessed; and a presentation of the development, screening, and evaluation of CAAs (e.g., the FS). After receipt of Ecology's comments, a Public Review Draft FS Report will be prepared and both documents will then be available for public comment per Exhibit C of the AO and WAC 173-340-600(13)(c).

Draft reports will be submitted as Adobe Acrobat files (.pdf format), with a paper copy also submitted if requested by Ecology. In addition to the Adobe Acrobat files, all associated Microsoft Excel©, AutoCAD©, and ArcGIS© or other electronic files used in preparing the report will be submitted with the draft reports. The text of Ecology review draft reports will also be submitted as Microsoft Word© files (.docx or .docm format) so that Word's review tracking feature can be used to make comments. Public review draft and final reports will be submitted as paper copies in the number requested by Ecology, with the report as an Adobe Acrobat file on a disk bound in the back. File sizes for Adobe Acrobat files to be posted to Ecology's web site will not exceed 30 megabytes. Either spiral bindings or comb bindings will be used for public review draft and final reports.

11.2 Schedule

Following is the RI/FS schedule outlined in Exhibit C of the AO:

1. **Validated Data Finalized.** 60 calendar days following completion of RI field activities.

2. **Agency Review Draft RI Report.** 90 calendar days after receipt of validated RI data.

3. **Public Review Draft RI Report.** 45 calendar days after receipt of Ecology comments on the Agency Review Draft RI report

4. **Agency Review Draft FS Report.** 90 calendar days after Ecology's request for the Public Review Draft RI report.

5. **Public Review Draft FS Report.** 45 calendar days after Ecology's approval of the Agency Review Draft FS report

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TABLES

Table 1

Monitoring Well and Boring Completion Details
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth Top	Depth Bottom	Elevation Top	Elevation Bottom			
Shallow Water-Bearing Zone Wells																		
F13	Property	N	Yes	NA	6/1/2013	1,268,570.14	231,929.52	40	40	38.38	39.69	10	40	28.38	-1.62	1	–	–
F5	Property	N	Yes	NA	6/1/2013	1,268,450.74	231,943.61	40	40	39.05	39.00	10	40	29.05	-0.95	1	–	–
F9	Property	N	Yes	NA	6/1/2013	1,268,508.08	231,942.51	40	40	38.48	38.76	10	40	28.48	-1.52	1	–	–
G12	Property	N	Yes	NA	6/1/2013	1,268,541.87	231,927.48	40	40	39.39	39.40	10	40	29.39	-0.61	1	–	–
J15	Property	N	Yes	NA	6/1/2013	1,268,578.97	231,895.55	40	40	38.74	38.85	10	40	28.74	-1.26	1	–	–
J5	Property	N	No	NA	6/1/2013	1,268,418.17	231,903.60	40	40	39.84	39.95	10	40	29.84	-0.16	1	–	–
K8	Property	N	Yes	NA	6/1/2013	1,268,456.68	231,888.93	40	40	39.90	40.39	10	40	29.90	-0.10	1	–	–
M15	Property	N	Yes	NA	6/1/2013	1,268,549.38	231,859.22	40	40	39.48	39.82	10	40	29.48	-0.52	1	–	–
MW121 (B121)	In the east sidewalk of the 8th Avenue ROW east of the Property	Y	Yes	NA	12/16/13	1,268,598.04	232,091.86	26.5	25	–	41.72	15	25	26.72	16.72	2	HSA	–
MW125 (B125)	In the Valley Street ROW north of the Property	Y	Yes	NA	12/20/13	1,268,598.04	232,091.86	31.5	30	–	43.55	15	30	28.55	13.55	2	HSA	–
MW-154	South side of the Roy St ROW, near MW106	N	Yes	BKF-350	03/30/18	1,268,485.83	231,733.87	35	35	53.05	52.57	25	35	28.05	18.05	2	HSA	–
MW-155	South side of the Roy St ROW, near MW105	N	Yes	BKF-354	04/10/18	1,268,721.17	231,733.31	30	30	44.39	44.05	20	30	24.39	14.39	2	HSA	–
MW-159	East side of 8th Ave N, near SV02	Y	Yes	BKF-358	04/16/18	1,268,680.42	231,910.30	31	31	43.25	42.79	20.4	30.4	22.85	12.85	2	HSA	–
MW-214	Valley Street ROW, north of Block 37	N	Yes	NA	–	1,269,388.42	231,861.09	–	17	27.81	27.32	7	17	20.81	10.81	2	–	–
MW-8	Northern portion of SCL property	N	TOC Elev	NA	–	–	–	19	19	–	33.19	4.5	19	28.69	14.19	2	–	–
MW-9	8th Avenue North ROW, east of Property	N	TOC Elev	NA	–	1268659.06	232076.185	22	22	–	40.81	7	22	33.81	18.81	2	–	–
N7	Property	N	Yes	NA	06/01/13	1,268,413.11	231,847.65	40	40	51.76	52.44	10	40	41.76	11.76	1	–	–
R-MW2	Property	Y	TOC Elev	NA	10/22/92	–	–	15	15	–	41.74	5	15	36.74	26.74	2	HSA	–
R-MW3	Property	Y	TOC Elev	NA	10/22/92	–	–	17	17	–	41.74	7	17	34.74	24.74	2	HSA	–
R-MW5	Bike Lane in Dexter Avenue, west of Property	Y	Yes	NA	10/27/92	1,268,352.09	231,915.17	30	30	–	57.03	15	30	42.03	27.03	2	HSA	–
R-MW6	Sidewalk, Southeast of Property	Y	Yes	NA	10/27/92	1,268,622.13	231,825.18	22	22	–	45.28	12	22	33.28	23.28	2	HSA	–
SCL-MW101	Alley east of 800 Aloha Street parcel	N	TOC Elev	NA	06/01/02	–	–	–	15	–	30.46	5	15	25.46	15.46	2	–	–
SCL-MW105	Alley east of 800 Aloha Street parcel	N	TOC Elev	NA	06/01/02	–	–	–	30	–	31.26	20	30	11.26	1.26	2	–	–
SCS-2	SCL property	N	TOC Elev	NA	–	–	–	–	21	–	39.16	11	21	28.16	18.16	4	–	–
SMW-3	Valley Street ROW, north of Block 37	N	Yes	NA	–	1,269,463.18	231,959.15	–	20	27.09	26.57	10	20	17.09	7.09	2	–	–
Intermediate A Water-Bearing Zone Wells																		
BB-8	Roy Street ROW, southeast of the Property	Y	Yes	NA	6/6/97	1,268,705.38	231,762.42	78.5	40	–	43.69	30	40	13.69	3.69	2	HSA	–
GEI-1	Block 37	Y	Yes	NA	4/16/14	1,269,362.77	231,828.18	81.5	26.8	–	27.95	26.8	36.8	1.15	-8.85	2	HSA	–
GEI-MW-1	739 9th Avenue North	Y	TOC Elev	BIJ490	8/22/14	–	–	61.5	59.9	–	30.10	39.8	59.8	-9.70	-29.70	2	HSA	–
GEI-MW-2	739 9th Avenue North	Y	TOC Elev	BIJ492	8/23/14	–	–	60	37.1	–	31.00	27.0	37.0	4.00	-6.00	2	HSA	–
GEI-MW-3	739 9th Avenue North	Y	TOC Elev	BIJ491	8/23/14	–	–	65.5	59.5	–	30.75	49.4	59.4	-18.65	-28.65	2	HSA	–
MW107 (B107)	8th Avenue North ROW, east of Property	Y	Yes	NA	12/3/12	1,268,625.93	231,885.46	45.5	45	–	43.82	35	45	8.82	-1.18	2	HSA	–
MW108 (B108)	Alley east of 800 Aloha Street parcel	Y	Yes	NA	12/14/12	1,268,805.44	232,044.39	50.5	50	–	32.78	40	50	-7.22	-17.22	2	HSA	–
MW109 (B109)	Alley east of 800 Aloha Street parcel	Y	Yes	NA	12/4/12	1,268,808.76	231,943.07	45.5	45	–	34.97	35	45	-0.03	-10.03	2	HSA	–
MW110 (B110)	Alley east of 800 Aloha Street parcel	Y	Yes	NA	12/4/12	1,268,806.34	231,814.34	45.5	45	–	39.67	35	45	4.67	-5.33	2	HSA	–
MW114 (B114)	SDOT property south of Roy Street	Y	Yes	NA	12/10/12	1,268,537.67	231,656.12	45.5	45	–	45.84	35	45	10.84	0.84	2	HSA	–
MW115 (B115)	9th Avenue North ROW, east of the Property	Y	Yes	NA	12/13/12	1,268,948.67	231,824.86	46	45	34.44	34.10	35	45	-0.56	-10.56	2	HSA	–
MW116 (B116)	9th Avenue North ROW, east of the Property	Y	Yes	NA	12/7/12	1,268,952.65	232,006.18	46.5	45	31.92	31.34	35	45	-3.08	-13.08	2	HSA	–
MW117 (B117)	Eastern sidewalk of the Dexter Avenue ROW, south of the Property	Y	Yes	NA	2/4/13	1,268,343.66	231,643.72	55.5	55	–	56.90	40	55	16.90	1.90	2	HSA	–
MW118 (B118)	Mercer Street ROW, south of the Property	Y	Yes	NA	3/21/13	1,268,503.40	231,491.37	55.5	50	–	52.91	40	50	12.91	2.91	2	HSA	–
MW119 (B119)	9th Avenue North ROW, southeast of the Property	Y	Yes	NA	3/21/13	1,268,924.29	231,652.18	46	45	37.74	37.42	35	45	2.74	-7.26	2	HSA	–
MW120 (B120)	8th Avenue ROW, northeast of the Property	Y	Yes	NA	12/16/13	1,268,675.29	232,145.67	50.5	50	–	40.00	40	50	0.00	-10.00	2	HSA	–
MW127 (B127)	8th Avenue ROE northeast of the Property	Y	Yes	NA	12/31/13	1,268,689.96	232,261.39	50.5	50	–	39.04	40	50	-0.96	-10.96	2	HSA	–
MW131	Property	Y	Yes	BIX-341	3/03/16 – 3/04/16	1,268,544.45	231,831.38	54.0	54	39.84	39.39	44	54	-4.16	-14.16	2	HSA	40

Table 1

Monitoring Well and Boring Completion Details
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
MW-142	8th Ave N ROW, near MW121	Y	Yes	BKF-356	4/12/18	1,268,681.79	231,977.91	51.0	50	42.44	42.12	40	50	2.44	-7.56	2	HSA	–
MW-144	East side of 8th Ave N ROW, north of Roy Street	N	Yes	BKF-355	4/18/18	1,268,680.09	231,857.59	50.0	50	43.87	43.50	40	50	3.87	-6.13	2	HSA	–
MW-146	South side of Roy Street ROW, near MW106	N	Yes	BKF-349	3/30/18	1,268,493.78	231,733.61	50.0	51	52.74	52.34	39.8	49.8	12.94	2.94	2	HSA	–
MW-149	Northeast quadrant of the Property	N	Yes	BKF-142	3/12/18	1,268,528.97	231,983.66	46.0	45	35.66	35.22	35	45	0.66	-9.34	2	HSA	–
MW-151	Southwest quadrant of the Property	N	Yes	BKF-143	3/12/18	1,268,403.10	231,899.51	46.0	45	39.94	39.38	35	45	4.94	-5.06	2	HSA	–
MW-156	East side of 8th Ave N, near MW-9	N	Yes	BKF-359	4/16/18	1,268,683.09	232,036.58	51.0	50	41.64	41.24	39.6	49.6	2.04	-7.96	2	HSA	–
Intermediate B Water-Bearing Zone Wells																		
MW111 (B111)	Alley east of 800 Aloha Street parcel	Y	Yes	NA	12/05/12 – 12/06/12	1,268,807.78	231,896.74	80.5	80	–	36.48	70	80	-33.52	-43.52	2	HSA	50
MW112 (B112)	In ROW West of the Property	Y	Yes	NA	12/11/12 – 12/12/12	1,268,310.57	231,915.11	85.5	85	57.71	57.45	75	85	-17.29	-27.29	2	HSA	–
MW126 (B126)	Alley east of 800 Aloha Street parcel	Y	Yes	NA	12/30/13	1,268,813.91	232,263.78	95	95	–	30.94	85	95	-54.06	-64.06	2	HSA	–
MW130	Property	Y	Yes	BIX-340	3/01/16 – 3/02/16	1,268,422.37	231,932.27	80	80	39.12	38.72	70	80	-30.88	-40.88	2	HSA	40
W-MW-01	In ROW East of the Property	N	Yes	NA	1/27/2012	1,268,631.93	231,818.02	80	80	–	44.88	70	80	-25.12	-35.12	2	HSA	–
W-MW-02	In ROW East of the Property	N	Yes	NA	1/29/2012	1,268,627.92	231,911.22	80	80	–	43.46	70	80	-26.54	-36.54	2	HSA	–
MW-132	North central part of the Property	Y	Yes	BKA-298	8/22/17 – 8/23/17	1,268,494.61	231,916.83	83	80	40.10	40.07	70	80	-29.90	-39.90	2	Sonic	55
MW-134	Northeast quadrant of the Property	Y	Yes	BKA-294	8/27/17 – 8/29/17	1,268,601.58	231,993.63	90	90	41.45	41.05	80	90	-38.55	-48.55	2	Sonic	–
MW-135	North central part of the Property	Y	Yes	BKA-299	8/24/17 – 8/25/17	1,268,495.24	231,963.50	80	80	39.11	38.96	70	80	-30.89	-40.89	2	Sonic	60
MW-136	Southwest corner of the Property	Y	Yes	BKA-300	8/28/17 – 8/29/17	1,268,420.05	231,820.95	95.5	95.5	51.87	51.45	84.6	94.6	-32.73	-42.73	2	Sonic	–
MW-139	Southeast quadrant of the Property	Y	Yes	BKA-295	9/13/17 – 9/14/17	1,268,533.63	231,841.28	80	80	39.81	39.44	70	80	-30.19	-40.19	2	Sonic	–
MW-143	8th Ave N ROW, near MW121	Y	Yes	BKF-355	04/12/18	1,268,681.54	231,974.66	82.0	80	42.43	42.04	70.1	80.0	-27.67	-37.57	2	HSA	–
MW-145	East side of 8th Ave N ROW, north of Roy Street	N	Yes	BKF-360	04/18/18	1,268,678.28	231,851.15	81.0	80	43.86	43.46	70	80	-26.14	-36.14	2	HSA	–
MW-147	South side of Roy Street ROW, near MW106	Y	Yes	BKF-351	04/02/18	1,268,501.67	231,733.85	80.0	80	52.36	51.85	70	80	-17.64	-27.64	2	HSA	–
MW-148	South side of the Roy St ROW, near MW105	Y	Yes	BKF-353	04/09/18	1,268,725.60	231,731.90	80.5	80	44.27	43.91	70	80	-25.73	-35.73	2	HSA	–
MW-150	Northeast quadrant of the Property	N	Yes	BKF-141	03/09/18	1,268,528.54	231,978.38	60.0	59	35.75	35.39	49	59	-13.25	-23.25	2	HSA	–
MW-152	Southwest quadrant of the Property	Y	Yes	BKF-144	03/13/18	1,268,391.47	231,898.22	60.0	60	39.85	39.11	50	60	-10.15	-20.15	2	HSA	–
MW-157	East side of 8th Ave N, near MW-9	N	Yes	BKF-357	04/13/18	1,268,683.21	232,040.85	81.0	80	41.61	41.22	69.9	79.8	-28.29	-38.19	2	HSA	–
Deep Water-Bearing Zone Wells																		
FMW-129	SDOT Parcel south of Property	Y	Yes	NA	5/13/14 – 5/16/14	1,268,873.71	231,707.21	119	89.2	38.64	38.31	84.2	89.2	-45.56	-50.56	2	HSA	–
FMW-131	Block 37	Y	Yes	NA	8/25/16 – 8/30/16	1,269,436.35	231,629.37	75.0	74.85	–	27.85	62.5	72.5	-34.65	-44.65	2	HSA	–
FMW-3D	Block 37	Y	Yes	NA	3/7/16 – 3/8/16	1,269,941.28	231,737.65	71.5	69	–	27.88	59	69	-31.12	-41.12	2	HSA	–
GEI-2	Block 37	Y	Yes	NA	4/16/14 – 4/17/14	1,269,358.70	231,666.08	81.5	60.5	–	29.38	50.5	60.5	-21.12	-31.12	2	HSA	–
MW101 (B101)	Central portion of the Property	Y	Yes	NA	7/10/12 – 7/12/12	1,268,533.39	231,934.66	140	115	–	39.49	105	115	-65.51	-75.51	2	Sonic	40, 80
MW102 (B102)	In the southern Valley Street sidewalk, north of the Property	Y	Yes	NA	7/17/12 – 7/23/12	1,268,504.81	232,058.51	125	125	–	49.19	115	125	-65.81	-75.81	2	Sonic	–
MW103 (B103)	Between 8th And 9th Avenues North, east of Property	Y	Yes	NA	7/25/12 – 7/27 12	1,268,808.01	231,912.50	115	114	–	35.92	103.5	113.5	-67.58	-77.58	2	Sonic	–
MW104 (B104)	8th Avenue North ROW, east of the Property	Y	Yes	NA	7/30/12 – 8/01/12	1,268,635.95	231,912.28	130	129	–	42.68	119	129	-76.32	-86.32	2	Sonic	–
MW105 (B105)	Roy Street ROW, southeast of the Property	Y	Yes	NA	8/06/12 – 8/10/12	1,268,695.16	231,763.25	140	140	–	44.69	130	140	-85.31	-95.31	2	Sonic	–

Table 1

Monitoring Well and Boring Completion Details
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
MW106 (B106)	North portion of the SDOT property south of Aloha Street	Y	Yes	NA	8/14/12 – 8/15/12	1,268,501.66	231,720.28	140	140	–	51.99	130	140	-78.01	-88.01	2	Sonic	–
MW113 (B113)	9th Avenue North ROW, East of the Property	Y	Yes	NA	12/18/12	1,268,950.83	231,911.79	80	80	33.20	32.90	70	80	-36.80	-46.80	2	HSA	–
MW122 (B122)	Alley east of 800 Aloha Street parcel	Y	Yes	NA	12/17/13	1,268,810.95	232,139.15	115	115	–	30.03	105	115	-74.97	-84.97	2	HSA	–
MW123 (B123)	At the intersection of 9th Avenue and Westlake Avenue	Y	Yes	NA	12/18/13	1,269,085.13	232,171.44	80	80	–	27.51	70	80	-42.49	-52.49	2	HSA	–
MW124 (B124)	In the southern Valley Street sidewalk, north of the Property	Y	Yes	NA	12/19/13	1,268,387.41	232,058.20	120	120	–	56.24	110	120	-53.76	-63.76	2	HSA	–
MW128 (B128)	Southeast corner of the intersection of Westlake Avenue and Valley Street	Y	Yes	BID-021	1/9/14	1,269,319.15	231,810.63	70.5	70	29.20	28.59	60	70	-30.80	-40.80	2	HSA	–
MW-133	Southwest quadrant of the Property	Y	Yes	BKA-297	8/15/17 – 8/17/17	1,268,397.31	231,878.49	145	139	40.08	39.77	129	139	-88.92	-98.92	2	Sonic	62.5
MW-137	Southwest quadrant of the Property	Y	Yes	NA	8/31/17 – 9/1/17	1,268,471.72	231,851.07	115	115	51.73	51.46	105	115	-53.27	-63.27	2	Sonic	–
MW-138	In the Dexter Ave N ROW, west of the southwest Property quadrant	Y	Yes	BKA-296	9/12/17 – 9/15/17	1,268,345.42	231,841.79	117	115	57.48	57.06	105	115	-47.52	-57.52	2	Sonic	–
MW-140	In the Roy Street ROW south of the central part of the Property	Y	Yes	BKA-301	8/30/17 – 8/31/17	1,268,511.94	231,782.78	140	140	50.57	50.20	129.5	139.5	-78.93	-88.93	2	Sonic	–
MW-141	Southeast quadrant of the Property	Y	Yes	NA	9/18/17 – 9/19/17	1,268,598.81	231,860.58	107	105	39.59	39.32	95.0	105.0	-55.41	-65.41	2	Sonic	–
MW-153	South side of the Roy St ROW, east of Dexter Ave N	Y	Yes	BKF-348	03/29/18	1,268,443.98	231,734.96	130	130	54.75	54.35	120	130	-65.25	-75.25	2	HSA	–
MW-158A	East side of 8th Ave N, near MW-9	Y	Yes	BKF-352	04/06/18	1,268,683.06	232,045.84	100	100	41.51	41.09	89.7	100	-48.15	-58.49	2	HSA	–
MW-160	West side of 8th Ave N, north of MW104	Y	Yes	BKF-460	05/10/18	1,268,623.03	232,076.19	128	128	41.51	43.46	118	128	-76.49	-86.49	2	HSA	–
MW-161	West side of 8th Ave N, south of MW107	Y	Yes	BKF-460	05/06/18	1,268,620.17	231,867.96	140	140	41.51	43.82	130	140	-88.49	-98.49	2	HSA	–
MW-162	Northeast quandrant of the Property	Y	No	BKH-255	1/27/19 – 1/28/19	–	–	110.5	110.1	38.2	–	99.8	109.8	-61.60	-71.60	2	Sonic	90
MW-163	Central portion of the Property	Y	No	BKH-257	1/29/19 – 1/30/19	–	–	110.5	110.3	39.2	–	100.2	110.2	-61.00	-71.00	2	Sonic	90
MW-164	Southwest quandrant of the Property	Y	No	BKH-256	1/24/19 – 1/25/19	–	–	111	110	39.8	–	99.7	109.7	-59.90	-69.90	2	Sonic	90
Shallow Soil Vapor Probes																		
SV01	East sidewalk of 8th Ave N ROW, next to 800 Aloha St parcel	Y	No	–	3/11/13	–	–	12.25	–	–	–	11.75	12.25	–	–	–	DP	–
SV02	East sidewalk of 8th Ave N ROW, next to 800 Aloha St parcel	Y	No	–	3/11/13	–	–	11.75	–	–	–	11.25	11.75	–	–	–	DP	–
SV03	East sidewalk of 8th Ave N ROW, next to 800 Aloha St parcel	Y	No	–	3/11/13	–	–	12.75	–	–	–	12.25	12.75	–	–	–	DP	–
Shallow Wate-Bearing Zone Borings																		
B-249	Western portion of the Property	Y	No	–	10/15/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-250	Western portion of the Property	Y	No	–	10/15/18-10/16/18	–	–	30.00	–	39.4	–	–	–	–	–	–	DP	–
B-251	Western portion of the Property	Y	No	–	10/15/18	–	–	25.00	–	39.4	–	–	–	–	–	–	DP	–
B-252	Western portion of the Property	Y	No	–	10/15/18	–	–	29.00	–	39.4	–	–	–	–	–	–	DP	–
B-253A	Western portion of the Property	Y	No	–	10/18/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-254	Western portion of the Property	Y	No	–	10/16/18	–	–	25.00	–	39.4	–	–	–	–	–	–	DP	–
B-254A	Western portion of the Property	Y	No	–	10/16/18	–	–	35.00	–	39.4	–	–	–	–	–	–	Sonic	–
B-255	Western portion of the Property	Y	No	–	10/16/18	–	–	16.00	–	39.4	–	–	–	–	–	–	DP	–
B-255A	Western portion of the Property	Y	No	–	10/16/18	–	–	21.00	–	39.4	–	–	–	–	–	–	DP	–
B-256	Western portion of the Property	Y	No	–	10/16/18	–	–	18.00	–	39.4	–	–	–	–	–	–	DP	–
B-257	Western portion of the Property	Y	No	–	10/17/18	–	–	25.00	–	39.4	–	–	–	–	–	–	DP	–
B-258	Western portion of the Property	Y	No	–	10/17/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-259	Western portion of the Property	Y	No	–	10/17/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-260	Western portion of the Property	Y	No	–	10/17/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-261	Western portion of the Property	Y	No	–	10/17/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-262	Western portion of the Property	Y	No	–	10/17/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-263	Western portion of the Property	Y	No	–	10/18/18	–	–	18.00	–	39.4	–	–	–	–	–	–	DP	–

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Monitoring Well and Boring Completion Details
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Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
B-264	Western portion of the Property	Y	No	–	10/18/18	–	–	16.00	–	39.4	–	–	–	–	–	–	DP	–
B-265	Western portion of the Property	Y	No	–	10/18/18	–	–	17.50	–	39.4	–	–	–	–	–	–	DP	–
B-266	Western portion of the Property	Y	No	–	10/18/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
B-267	Western portion of the Property	Y	No	–	10/18/18	–	–	20.00	–	39.4	–	–	–	–	–	–	DP	–
Intermediate A Water-Bearing Zone Borings																		
DB01	Northwest portion of the Property	Y	No	–	3/18/13	–	–	41	–	–	–	–	–	–	–	–	HSA	–
DB02	Northern portion of the Property	Y	No	–	3/18/13	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
DB03	Northeast portion of the Property	Y	No	–	3/27/13	–	–	60.5	–	–	–	–	–	–	–	–	HSA	–
DB04	Northwest portion of the Property	Y	No	–	3/21/13, 3/24/13	–	–	60	–	–	–	–	–	–	–	–	HSA	–
DB05	Southwest portion of the Property	Y	No	–	3/26/13	–	–	70.5	–	–	–	–	–	–	–	–	HSA	–
DB11	Southwest corner of the Property	Y	No	–	4/2/13	–	–	55	–	–	–	–	–	–	–	–	HSA	–
DB12	North-central portion of the Property	Y	No	–	4/3/13	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
DB13	Southwest portion of the Property	Y	No	–	4/3/13	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
DB14	Northeast portion of the Property	Y	No	–	4/4/13	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
B-201	Southwest portion of the Property	Y	No	–	4/4/13	–	–	50.5	–	–	–	–	–	–	–	–	Sonic	–
B-202	Northwest portion of the Property	Y	Yes	–	6/19/17	1,268,405.50	231,991.69	50.5	–	39.17	–	–	–	–	–	–	Sonic	–
B-204	Southeast portion of the Property	Y	Yes	–	6/20/17	1,268,599.02	231,834.38	50.5	–	39.80	–	–	–	–	–	–	Sonic	–
B-218	North central part of the Property	Y	Yes	–	09/19/17	1,268,498.98	231,949.50	50	–	38.11	–	–	–	–	–	–	Sonic	–
B-220	North central part of the Property	Y	Yes	–	9/20/17	1,268,507.48	231,959.67	50	–	38.91	–	–	–	–	–	–	Sonic	–
B-222	North central part of the Property	Y	Yes	–	9/21/17	1,268,485.13	231,956.09	50	–	39.16	–	–	–	–	–	–	Sonic	–
B-223	North central part of the Property	Y	Yes	–	9/21/17	1,268,481.78	231,979.18	50	–	39.10	–	–	–	–	–	–	Sonic	–
B-224	North central part of the Property	Y	No	–	11/27/17	–	–	60.5	–	–	–	–	–	–	–	–	HSA	–
B-225	North central part of the Property	Y	No	–	11/27/17	–	–	40.6	–	–	–	–	–	–	–	–	HSA	–
B-226	North central part of the Property	Y	No	–	11/28/17	–	–	40.0	–	–	–	–	–	–	–	–	HSA	–
B-227	North central part of the Property	Y	No	–	11/28/17	–	–	41.0	–	–	–	–	–	–	–	–	HSA	–
B-228	North central part of the Property	Y	No	–	11/29/17	–	–	41.0	–	–	–	–	–	–	–	–	HSA	–
B-229	North central part of the Property	Y	No	–	11/29/17	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
B-230	North central part of the Property	Y	No	–	11/30/17	–	–	55.5	–	–	–	–	–	–	–	–	HSA	–
B-231	North central part of the Property	Y	No	–	11/30/17	–	–	40.5	–	–	–	–	–	–	–	–	HSA	–
B-232	North central part of the Property	Y	No	–	12/1/17	–	–	40.0	–	–	–	–	–	–	–	–	HSA	–
B-233	North central part of the Property	Y	No	–	12/1/17	–	–	41.5	–	–	–	–	–	–	–	–	HSA	–
B-234	Southwest corner of the Property	Y	No	–	12/4/17	–	–	37.0	–	–	–	–	–	–	–	–	HSA	–
B-234A	Southwest corner of the Property	Y	No	–	12/4/17	–	–	45.0	–	–	–	–	–	–	–	–	HSA	–
B-235	Southwest corner of the Property	Y	No	–	12/4/17, 12/5/17	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
B-236	Southwest corner of the Property	Y	No	–	12/5/17	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
B-237	Southwest corner of the Property	Y	No	–	12/6/17	–	–	45.5	–	–	–	–	–	–	–	–	HSA	–
B-238	North central part of the Property	Y	No	–	12/6/17	–	–	40.0	–	–	–	–	–	–	–	–	HSA	–
Intermediate B Water-Bearing Zone Borings																		
DB06	Southern portion of the Property	Y	No	–	3/25/13	–	–	80.5	–	–	–	–	–	–	–	–	HSA	–
DB07	South-central portion of the Property	Y	No	–	3/27/13, 3/28/13	–	–	90.5	–	–	–	–	–	–	–	–	HSA	–
DB08	Southeast portion of the Property	Y	No	–	3/20/13, 3/21/13	–	–	70.5	–	–	–	–	–	–	–	–	HSA	–
DB09	Southeast portion of the Property	Y	No	–	3/19/13	–	–	70.5	–	–	–	–	–	–	–	–	HSA	–
DB10	Western portion of the Property	Y	No	–	3/29/13, 4/01/13	–	–	71.5	–	–	–	–	–	–	–	–	HSA	–
B-203	Northeast portion of the Property	Y	Yes	–	6/20/17	1,268,561.63	232,025.18	80.5	–	39.18	–	–	–	–	–	–	Sonic	–
B-205	Northeast portion of the Property	Y	Yes	–	8/30/17	1,268,576.55	232,029.05	80	–	40.28	–	–	–	–	–	–	Sonic	–

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								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
B-206	North central part of the Property	Y	Yes	–	8/14/17	1,268,449.73	231,966.00	80	–	39.10	–	–	–	–	–	–	Sonic	–
B-207	North central part of the Property	Y	Yes	–	8/25/17	1,268,512.28	231,939.23	90	–	38.51	–	–	–	–	–	–	Sonic	55
B-208	Southeast quadrant of the Property	Y	Yes	–	8/24/17	1,268,562.08	231,910.53	80	–	38.80	–	–	–	–	–	–	Sonic	–
B-209	Southeast quadrant of the Property	Y	Yes	–	8/25/17	1,268,592.62	231,906.12	82	–	38.97	–	–	–	–	–	–	Sonic	–
B-210	Southeast quadrant of the Property	Y	Yes	–	8/21/17-8/22/17	1,268,521.39	231,878.26	80	–	39.38	–	–	–	–	–	–	Sonic	50
B-216	Southern central portion of the property	Y	Yes	–	9/1/17	1,268,471.33	231,824.29	95	–	51.86	–	–	–	–	–	–	Sonic	–
B-219	Southeast portion of the Property	Y	Yes	–	8/28/17	1,268,593.22	231,834.94	80	–	39.79	–	–	–	–	–	–	Sonic	–
B-221	North central part of the Property	Y	Yes	–	9/20/17-9/21/17	1,268,500.74	231,971.67	70	–	39.02	–	–	–	–	–	–	Sonic	–
B-239	Property	Y	Yes	–	04/18/18	1,268,455.45	232,010.81	80	–	39.24	–	–	–	–	–	–	HSA	–
B-240	Property	Y	Yes	–	04/02/18	1,268,445.88	231,984.23	80	–	39.24	–	–	–	–	–	–	HSA	–
B-241	Property	Y	Yes	–	04/03/18	1,268,444.93	231,958.45	80	–	39.08	–	–	–	–	–	–	HSA	–
B-242	Property	Y	Yes	–	04/04/18	1,268,395.16	231,959.03	80	–	38.84	–	–	–	–	–	–	HSA	–
B-243	Property	Y	Yes	–	03/29/18	1,268,379.31	231,911.19	80	–	39.88	–	–	–	–	–	–	HSA	–
B-244	Property	Y	Yes	–	03/28/18	1,268,560.60	231,894.07	80	–	38.79	–	–	–	–	–	–	HSA	–
B-245	Property	Y	Yes	–	03/28/18	1,268,542.23	231,812.38	80	–	39.90	–	–	–	–	–	–	HSA	–
B-246	Property	Y		–	05/11/18	–	–	80	–	39.88	–	–	–	–	–	–	HSA	–
B-247	Property	Y	Yes	–	04/20/18	1,268,459.49	231,907.63	81	–	39.73	–	–	–	–	–	–	HSA	–
Deep Water-Bearing Zone Borings																		
B-211	Southwest quadrant of the Property	Y	Yes	–	8/17/17-8/18/17	1,268,426.80	231,900.70	122	–	39.75	–	–	–	–	–	–	Sonic	55
B-212	Dexter Ave ROW, west of central portion of the Property	Y	Yes	–	9/8/17-9/11/17	1,268,349.91	231,945.06	100	–	57.61	–	–	–	–	–	–	Sonic	–
B-213	Dexter Ave ROW, west of the Property	Y	Yes	–	9/5/17-9/6/17	1,268,347.25	231,893.53	125	–	57.42	–	–	–	–	–	–	Sonic	–
B-214	Dexter Ave ROW, west of lower southwest quadrant of the Property	Y	Yes	–	9/7/17-9/8/17	1,268,344.84	231,831.15	120	–	57.42	–	–	–	–	–	–	Sonic	–
B-215	Roy St ROW, south of the southwest quadrantt of the property	Y	Yes	–	9/12/17-9/13/17	1,268,432.65	231,782.45	95	–	53.95	–	–	–	–	–	–	Sonic	–
B-217	Southwest corner of the property	Y	Yes	–	9/5/17	1,268,385.94	231,843.51	115	–	51.80	–	–	–	–	–	–	Sonic	–
B-248	Property	Yes	Yes	–	4/23/18	1,268,430.90	231,824.98	115	–	51.85	–	–	–	–	–	–	HSA	–
Treatment Zone A Injection Wells																		
IW-1A	Property	Y	Yes	BKF-132	03/02/18	1,268,539.39	232,028.04	49	48	37.01	–	33	48	4.01	-10.99	2	HSA	–
IW-2A	Property	Y	Yes	BKF-134	03/05/18	1,268,566.64	232,025.70	51	50	39.57	–	35	50	4.57	-10.43	2	HSA	–
IW-3A	Property	Y	Yes	BKF-210	03/09/18	1,268,471.14	232,008.21	50	50	39.22	–	30	50	9.22	-10.78	2	HSA	–
IW-4A	Property	Y	Yes	BKF-182	03/06/18	1,268,500.28	232,010.35	50	49	38.90	–	29	49	9.90	-10.10	2	HSA	–
IW-5A	Property	Y	Yes	BKS-137	03/06/18	1,268,529.18	232,004.88	47	46	36.05	–	25	45	11.05	-8.95	2	HSA	–
IW-6A	Property	Y	Yes	BKF-139	03/08/18	1,268,551.56	232,009.61	48	49	37.76	–	33	48	4.76	-10.24	2	HSA	–
IW-7A	Property	Y	Yes	BKF-192	03/15/18	1,268,577.15	232,008.24	51	50	40.09	–	35	50	5.09	-9.91	2	HSA	–
IW-8A	Property	Y	Yes	BKF-225	03/08/18	1,268,600.43	232,008.24	52	51	41.47	–	36	51	5.47	-9.53	2	HSA	–
IW-9A	Property	Y	Yes	BKF-209	03/09/18	1,268,456.41	231,992.20	49	49	39.22	–	29	49	10.22	-9.78	2	HSA	–
IW-10A	Property	Y	Yes	BKF-186	03/12/18	1,268,491.57	231,983.63	50	49	39.23	–	29	49	10.23	-9.77	2	HSA	–
IW-11A	Property	Y	Yes	BKF-128	02/23/18	1,268,519.48	231,988.42	50	49	35.29	–	34	49	1.29	-13.71	2	HSA	–
IW-12A	Property	Y	Yes	BKF-129	02/26/18	1,268,540.14	231,988.12	48	47	36.65	–	32	47	4.65	-10.35	2	HSA	–
IW-13A	Property	Y	Yes	BKF-190	03/14/18	1,268,565.44	231,986.17	51	49	38.42	–	34	49	4.42	-10.58	2	HSA	–
IW-14A	Property	Y	Yes	BKF-230	03/05/18	1,268,587.75	231,985.77	52	50	40.83	–	35	50	5.83	-9.17	2	HSA	–
IW-15A	Property	Y	Yes	BKS-228	03/07/18	1,268,611.47	231,990.54	53	52	41.81	–	37	52	4.81	-10.19	2	HSA	–
IW-16A	Property	Y	Yes	BKF-223	03/09/18	1,268,449.98	231,966.09	53	49	39.08	–	34	49	5.08	-9.92	2	HSA	–
IW-17A	Property	Y	Yes	BKF-220	03/13/18	1,268,472.68	231,980.01	54	49	39.11	–	29	49	10.11	-9.89	2	HSA	–
IW-18A	Property	Y	Yes	BKF-219	03/14/18	1,268,499.98	231,967.53	52	49	38.90	–	29	49	9.90	-10.10	2	HSA	–
IW-19A	Property	Y	Yes	BKF-145	03/13/18	1,268,523.81	231,965.23	47	47	37.48	–	27	47	10.48	-9.52	2	HSA	–

Table 1

Monitoring Well and Boring Completion Details
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
IW-20A	Property	Y	Yes	BKF-193	3/16-3/19/18	1,268,549.04	231,964.96	48	48	37.44	–	28	48	9.44	-10.56	2	HSA	–
IW-21A	Property	Y	Yes	BKF-235	02/28/18	1,268,574.60	231,964.18	51	50	39.28	–	35	50	4.28	-10.72	2	HSA	–
IW-22A	Property	Y	Yes	BKF-231	03/05/18	1,268,597.88	231,963.49	54	52	41.86	–	37	52	4.86	-10.14	2	HSA	–
IW-23A	Property	Y	Yes	BKF-176	02/28/18	1,268,461.14	231,947.95	52	52	39.02	–	37	52	2.02	-12.98	2	HSA	–
IW-24A	Property	Y	Yes	BKF-182	03/05/18	1,268,486.39	231,951.88	49	49	39.12	–	34	49	5.12	-9.88	2	HSA	–
IW-25A	Property	Y	Yes	BKF-238	02/26/18	1,268,511.47	231,944.62	50	49	38.13	–	34	49	4.13	-10.87	2	HSA	–
IW-26A	Property	Y	Yes	BKF-239	02/23/18	1,268,536.37	231,943.60	50	48.5	38.68	–	33.5	48.5	5.18	-9.82	2	HSA	–
IW-27A	Property	Y	Yes	BKF-245	02/09/18	1,268,562.59	231,943.08	49	49	38.41	–	34	49	4.41	-10.59	2	HSA	–
IW-28A	Property	Y	Yes	BKF-233	03/01/18	1,268,588.74	231,941.99	52	51	42.00	–	36	51	6.00	-9.00	2	HSA	–
IW-29A	Property	Y	Yes	BKF-182	03/05/18	1,268,521.50	231,921.38	49	49	39.55	–	34	49	5.55	-9.45	2	HSA	–
IW-30A	Property	Y	Yes	BKF-179	03/01/18	1,268,548.35	231,928.37	50	50	39.08	–	35	50	4.08	-10.92	2	HSA	–
IW-31A	Property	Y	Yes	BKF-170	02/19/18	1,268,484.93	231,907.20	50	50	40.07	–	35	50	5.07	-9.93	2	HSA	–
IW-32A	Property	Y	Yes	BKF-122	02/15/18	1,268,395.74	231,907.86	52	50.5	39.86	–	35.5	50.5	4.36	-10.64	2	HSA	–
IW-33A	Property	Y	Yes	BKF-208	03/07/18	1,268,513.26	231,911.19	51	50	40.18	–	35	50	5.18	-9.82	2	HSA	–
IW-34A	Property	Y	Yes	BKF-119	02/13/18	1,268,413.88	231,907.87	51	50	39.92	–	35	50	4.92	-10.08	2	HSA	–
IW-35A	Property	Y	Yes	BKF-168	02/15/18	1,268,475.13	231,887.90	50	50	40.41	–	35	50	5.41	-9.59	2	HSA	–
IW-36A	Property	Y	Yes	BKF-153	2/12-2/13/18	1,268,377.32	231,881.69	53	52	39.90	–	37	52	2.90	-12.10	2	HSA	–
IW-37A	Property	Y	Yes	BKF-152	02/07/18	1,268,489.05	231,880.66	51	50	40.39	–	35	50	5.39	-9.61	2	HSA	–
IW-38A	Property	Y	Yes	BKF-158	02/16/18	1,268,403.80	231,893.71	52	51	40.07	–	36	51	4.07	-10.93	2	HSA	–
IW-39A	Property	Y	Yes	BKF-117	02/12/18	1,268,426.72	231,886.82	51	51	39.87	–	36	51	3.87	-11.13	2	HSA	–
IW-40A	Property	Y	Yes	BKF-196	03/20/18	1,268,386.01	231,859.14	57	56	51.76	–	36	56	15.76	-4.24	2	HSA	–
IW-41A	Property	Y	Yes	BKF-150	03/19/18	1,268,411.44	231,855.89	63	62	51.65	–	42	62	9.65	-10.35	2	HSA	–
IW-42A	Property	Y	Yes	BKF-149	03/19/18	1,268,386.17	231,839.74	63	62	51.84	–	42	62	9.84	-10.16	2	HSA	–
IW-43A	Property	Y	Yes	BKF-113	02/08/18	1,268,569.60	231,829.78	50	50	39.64	–	35	50	4.64	-10.36	2	HSA	–
IW-44A	Property	Y	Yes	BKF-114	02/08/18	1,268,595.81	231,828.30	50	50	39.82	–	35	50	4.82	-10.18	2	HSA	–
IW-45A	Property	Y	Yes	BKF-148	03/16/18	1,268,383.46	231,821.88	64	62	51.89	–	42	62	9.89	-10.11	2	HSA	–
IW-46A	Property	Y	Yes	BKF-110	02/06/18	1,268,535.05	231,811.45	53	51	39.88	–	36	51	3.88	-11.12	2	HSA	–
IW-47A	Property	Y	Yes	BKF-111	02/07/18	1,268,557.69	231,810.82	53	53	39.87	–	38	53	1.87	-13.13	2	HSA	–
IW-48A	Property	Y	Yes	BKF-112	02/07/18	1,268,581.43	231,810.01	51	51	39.92	–	36	51	3.92	-11.08	2	HSA	–
IW-50A	Property	Y	Yes	BKF-363	03/27/18	1,268,408.58	231,839.62	63	62	51.81	–	42	62	9.81	-10.19	2	HSA	–
IW-51A	Property	Y	Yes	BKF-200	03/26/18	1,268,402.42	231,822.33	63	62	51.89	–	42	62	9.89	-10.11	2	HSA	–
IW-52A	Property	Y	No	BKH-295	09/20/18	–	–	46	45.2	36.20	–	25.8	45.8	10.4	-9.6	2	Sonic	–
IW-53A	Property	Y	No	BKH-277	08/29/18	–	–	50	50	39.20	–	28.9	49	10.3	-9.8	2	Sonic	–
IW-54A	Property	Y	No	BKH-284	09/12/18	–	–	50	49.6	39.40	–	29.6	49.6	9.8	-10.2	2	Sonic	–
IW-55A	Property	Y	No	BKH-279	09/05/18	–	–	52	51.8	41.20	–	31.7	51.8	9.50	-10.60	2	Sonic	–
IW-56A	Property	Y	No	BKH-278	09/05/18	–	–	52	50	40.20	–	35	50	5.2	-9.8	2	Sonic	–
IW-57A	Property	Y	No	BKH-293	09/19/18	–	–	65	62.5	51.70	–	47.2	62.2	4.5	-10.5	2	Sonic	–
IW-58A	Property	Y	No	BKR-484	10/17/18	–	–	51	50.55	39.20	–	35.3	50.3	3.9	-11.1	2	Sonic	–
Treatment Zone B Injection Wells																		
IW-1B	Property	Y	Yes	BKF-133	03/02/18	1,268,536.68	232,032.13	64	63	36.81	–	48	63	-11.19	-26.19	2	HSA	–
IW-2B	Property	Y	Yes	BKF-135	03/05/18	1,268,563.86	232,031.13	66	65	39.56	–	50	65	-10.44	-25.44	2	HSA	–
IW-3B	Property	Y	Yes	BKF-181	03/06/18	1,268,496.44	232,006.05	65	64	39.07	–	49	64	-9.93	-24.93	2	HSA	–
IW-4B	Property	Y	Yes	BKF-136	03/06/18	1,268,527.20	232,009.32	64	63	36.08	–	48	63	-11.92	-26.92	2	HSA	–
IW-5B	Property	Y	Yes	BKF-140	03/08/18	1,268,547.37	232,009.88	64	63	37.43	–	48	63	-10.57	-25.57	2	HSA	–
IW-6B	Property	Y	Yes	BKF-191	03/15/18	1,268,572.95	232,010.79	65	65	39.65	–	50	65	-10.35	-25.35	2	HSA	–

Table 1

Monitoring Well and Boring Completion Details
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
IW-7B	Property	Y	Yes	BKF-224	03/09/18	1,268,598.78	232,012.09	67	66	41.48	–	51	66	-9.52	-24.52	2	HSA	–
IW-8B	Property	Y	Yes	BKF-195	3/19-3/20/18	1,268,464.24	231,991.12	64.5	64	39.19	–	49	64	-9.81	-24.81	2	HSA	–
IW-9B	Property	Y	Yes	BKF-184	03/08/18	1,268,495.30	231,980.09	65	64.5	39.16	–	49.5	64.5	-10.34	-25.34	2	HSA	–
IW-10B	Property	Y	Yes	BKF-131	03/01/18	1,268,518.75	231,992.62	64	63	35.41	–	48	63	-12.59	-27.59	2	HSA	–
IW-11B	Property	Y	Yes	BKF-164	02/26/18	1,268,536.38	231,991.42	63	62	36.28	–	47	62	-10.72	-25.72	2	HSA	–
IW-12B	Property	Y	Yes	BKF-189	03/14/18	1,268,561.38	231,990.46	65	64	38.03	–	49	64	-10.97	-25.97	2	HSA	–
IW-13B	Property	Y	Yes	BKF-226	03/08/18	1,268,586.98	231,990.83	67	66	40.68	–	51	66	-10.32	-25.32	2	HSA	–
IW-14B	Property	Y	Yes	BKF-227	03/07/18	1,268,607.87	231,991.75	70	69	41.63	–	54	69	-12.37	-27.37	2	HSA	–
IW-15B	Property	Y	Yes	BKF-222	03/12/18	1,268,445.61	231,966.44	67	64	39.10	–	49	64	-9.90	-24.90	2	HSA	–
IW-16B	Property	Y	Yes	BKF-221	03/13/18	1,268,474.83	231,964.68	67	64	39.00	–	49	64	-10.00	-25.00	2	HSA	–
IW-17B	Property	Y	Yes	BKF-218	03/14/18	1,268,497.35	231,964.43	65	64	39.03	–	49	64	-9.97	-24.97	2	HSA	–
IW-18B	Property	Y	Yes	BKF-147	03/15/18	1,268,521.69	231,958.50	63	62	37.52	–	47	62	-9.48	-24.48	2	HSA	–
IW-19B	Property	Y	Yes	BKF-194	03/19/18	1,268,546.16	231,970.53	63.5	63	37.36	–	48	63	-10.64	-25.64	2	HSA	–
IW-20B	Property	Y	Yes	BKF-234	02/28/18	1,268,572.06	231,968.62	66	65	39.06	–	50	65	-10.94	-25.94	2	HSA	–
IW-21B	Property	Y	Yes	BKF-229	03/06/18	1,268,595.29	231,966.95	67	67	41.88	–	52	67	-10.12	-25.12	2	HSA	–
IW-22B	Property	Y	Yes	BKF-177	02/28/18	1,268,457.17	231,953.54	64	64	39.05	–	49	64	-9.95	-24.95	2	HSA	–
IW-23B	Property	Y	Yes	BKF-181	03/05/18	1,268,480.66	231,954.58	64	64	39.05	–	49	64	-9.95	-24.95	2	HSA	–
IW-24B	Property	Y	Yes	BKF-237	02/26/18	1,268,508.92	231,953.94	65	64	38.11	–	49	64	-10.89	-25.89	2	HSA	–
IW-25B	Property	Y	Yes	BKF-240	02/22/18	1,268,539.41	231,949.46	65	65	38.43	–	50	65	-11.57	-26.57	2	HSA	–
IW-26B	Property	Y	Yes	BKF-244	02/12/18	1,268,563.65	231,948.69	65	64	38.59	–	49	65	-10.41	-26.41	2	HSA	–
IW-27B	Property	Y	Yes	BKF-233	03/02/18	1,268,587.77	231,946.65	66	64	41.89	–	50	65	-8.11	-23.11	2	HSA	–
IW-28B	Property	Y	Yes	BKF-174	02/22/18	1,268,418.68	231,930.89	64	64	39.16	–	49	64	-9.84	-24.84	2	HSA	–
IW-29B	Property	Y	Yes	BKF-173	02/22/18	1,268,452.23	231,932.45	64	64	39.08	–	49	64	-9.92	-24.92	2	HSA	–
IW-30B	Property	Y	Yes	BKF-175	02/23/18	1,268,480.26	231,931.20	65	65	39.15	–	50	65	-10.85	-25.85	2	HSA	–
IW-31B	Property	Y	Yes	BKF-175	02/26/18	1,268,503.10	231,928.68	65	65	38.91	–	50	65	-11.09	-26.09	2	HSA	–
IW-32B	Property	Y	Yes	BKF-207	03/07/18	1,268,528.67	231,925.09	66	65	39.46	–	50	65	-10.54	-25.54	2	HSA	–
IW-33B	Property	Y	Yes	BKF-180	03/02/18	1,268,549.42	231,935.50	64	64	38.73	–	49	64	-10.27	-25.27	2	HSA	–
IW-34B	Property	Y	Yes	BKF-121	02/15/18	1,268,390.32	231,905.73	68	67	39.85	–	52	67	-12.15	-27.15	2	HSA	–
IW-35B	Property	Y	Yes	BKF-123	02/16/18	1,268,414.12	231,904.16	66	65	39.92	–	50	65	-10.08	-25.08	2	HSA	–
IW-36B	Property	Y	Yes	BKF-206	03/06/18	1,268,437.81	231,906.53	66	65	39.82	–	50	65	-10.18	-25.18	2	HSA	–
IW-37B	Property	Y	Yes	BKF-178	03/01/18	1,268,462.74	231,903.88	65	65	36.69	–	50	65	-13.31	-28.31	2	HSA	–
IW-38B	Property	Y	Yes	BKF-171	02/20/18	1,268,485.27	231,899.19	65	65	40.07	–	50	65	-9.93	-24.93	2	HSA	–
IW-39B	Property	Y	Yes	BKF-187	3/12-3/13/18	1,268,509.82	231,904.74	65	65	40.16	–	50	65	-9.84	-24.84	2	HSA	–
IW-40B	Property	Y	Yes	BKF-155	02/13/18	1,268,376.85	231,886.84	66	65	39.94	–	50	65	-10.06	-25.06	2	HSA	–
IW-41B	Property	Y	Yes	BKF-157	02/15/18	1,268,401.06	231,888.10	67	66	39.92	–	51	66	-11.08	-26.08	2	HSA	–
IW-42B	Property	Y	Yes	BKF-118	02/13/18	1,268,422.06	231,885.88	68	67	39.98	–	52	67	-12.02	-27.02	2	HSA	–
IW-43B	Property	Y	Yes	BKF-162	02/23/18	1,268,445.99	231,885.58	65	64.5	40.00	–	49.5	64.5	-9.50	-24.50	2	HSA	–
IW-44B	Property	Y	Yes	BKF-154	02/08/18	1,268,471.69	231,881.49	66	65	40.56	–	50	65	-9.44	-24.44	2	HSA	–
IW-45B	Property	Y	Yes	BKF-151	02/05/18	1,268,496.31	231,882.27	65	65	40.07	–	50	65	-9.93	-24.93	2	HSA	–
IW-46B	Property	Y	Yes	BKF-197	03/21/18	1,268,379.28	231,857.02	77	76	51.82	–	56	76	-4.18	-24.18	2	HSA	–
IW-47B	Property	Y	Yes	BKF-198	03/22/18	1,268,407.67	231,853.44	78	77	51.76	–	57	77	-5.24	-25.24	2	HSA	–
IW-48B	Property	Y	Yes	BKF-199	03/23/18	1,268,432.22	231,853.84	77	76	51.60	–	61	76	-9.40	-24.40	2	HSA	–
IW-49B	Property	Y	Yes	BKF-109	02/05/18	1,268,535.86	231,815.74	65	65	39.88	–	50	65	-10.12	-25.12	2	HSA	–
IW-50B	Property	Y	Yes	BKF-115	02/09/18	1,268,557.26	231,815.81	68	68	39.88	–	53	68	-13.12	-28.12	2	HSA	–
IW-51B	Property	Y	Yes	BKF-116	02/12/18	1,268,580.89	231,814.30	66	66	39.88	–	51	66	-11.12	-26.12	2	HSA	–

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Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
IW-52B	Property	Y	No	BKH-288	09/13/18	–	–	66	66	39.40	–	50.7	65.7	-11.3	-26.3	2	Sonic	–
IW-53B	Property	Y	No	BKH-296	09/20/18	–	–	63	62.8	36.70	–	47.8	62.8	-11.1	-26.1	2	Sonic	
IW-54B	Property	Y	No	BKH-281	9/5-9/6/18	–	–	67	64.5	39.50	–	49	64	-9.5	-24.5	2	Sonic	–
IW-55B	Property	Y	No	BKH-287	09/13/18	–	–	79	79.2	51.80	–	63.8	78.8	-12	-27	2	Sonic	–
IW-56B	Property	Y	No	BKH-294	09/14/18	–	–	80	78.4	52.00	–	63	78	-11	-26	2	Sonic	–
Treatment Zone C Injection Wells																		
IW-1C	Property	Y	Yes	BKF-183	03/07/18	1,268,506.76	232,011.33	79	78	39.12	–	63	78	-23.88	-38.88	2	HSA	–
IW-2C	Property	Y	Yes	BKF-138	03/07/18	1,268,531.69	232,009.90	77	76	36.24	–	61	76	-24.76	-39.76	2	HSA	–
IW-3C	Property	Y	Yes	BKF-185	03/09/18	1,268,497.19	231,985.98	80	79	39.09	–	64	79	-24.91	-39.91	2	HSA	–
IW-4C	Property	Y	Yes	BKF-130	02/28/18	1,268,519.44	231,983.41	79	78	35.19	–	63	78	-27.81	-42.81	2	HSA	–
IW-5C	Property	Y	Yes	BKF-201	02/27/18	1,268,537.55	231,981.83	78	77	36.38	–	62	77	-25.62	-40.62	2	HSA	–
IW-6C	Property	Y	Yes	BKF-188	03/13/18	1,268,559.78	231,980.97	81	80	37.95	–	65	80	-27.05	-42.05	2	HSA	–
IW-7C	Property	Y	Yes	BKF-217	03/15/18	1,268,490.47	231,963.53	82	81	39.16	–	66	81	-26.84	-41.84	2	HSA	–
IW-8C	Property	Y	Yes	BKF-146	03/14/18	1,268,520.09	231,965.32	77	77	37.46	–	62	77	-24.54	-39.54	2	HSA	–
IW-9C	Property	Y	Yes	BKF-236	02/27/18	1,268,516.55	231,942.01	80	79	38.06	–	64	79	-25.94	-40.94	2	HSA	–
IW-10C	Property	Y	Yes	BKF-243	02/13/18	1,268,416.70	231,935.67	79	79	39.15	–	64	79	-24.85	-39.85	2	HSA	–
IW-11C	Property	Y	Yes	BKF-120	02/14/18	1,268,402.98	231,915.53	81	80	39.83	–	65	80	-25.17	-40.17	2	HSA	–
IW-12C	Property	Y	Yes	BKF-203	03/01/18	1,268,427.89	231,913.46	80	80	39.86	–	65	80	-25.14	-40.14	2	HSA	–
IW-13C	Property	Y	Yes	BKF-204	03/02/18	1,268,452.88	231,912.34	81	80	39.78	–	65	80	-25.22	-40.22	2	HSA	–
IW-14C	Property	Y	Yes	BKF-172	02/21/18	1,268,477.86	231,912.58	80	80	39.54	–	65	80	-25.46	-40.46	2	HSA	–
IW-15C	Property	Y	Yes	BKF-156	02/14/18	1,268,396.38	231,889.64	82	81	39.92	–	66	80	-26.08	-40.08	2	HSA	–
IW-16C	Property	Y	Yes	BKF-159	02/19/18	1,268,416.93	231,893.12	76.5	75	39.86	–	60	75	-20.14	-35.14	2	HSA	–
IW-17C	Property	Y	Yes	BKF-163	02/26/18	1,268,439.93	231,891.79	80	80	39.84	–	65	80	-25.16	-40.16	2	HSA	–
IW-18C	Property	Y	Yes	BKF-166	02/14/18	1,268,464.20	231,892.02	80	80	40.12	–	65	80	-24.88	-39.88	2	HSA	–
IW-19C	Property	Y	Yes	BKF-165	02/13/18	1,268,484.72	231,885.48	82	81.5	40.34	–	66.5	81.5	-26.16	-41.16	2	HSA	–
IW-20C	Property	Y	Yes	BKF-126	02/21/18	1,268,402.17	231,874.37	86	84	40.19	–	69	84	-28.81	-43.81	2	HSA	–
IW-21C	Property	Y	Yes	BKF-161	02/22/18	1,268,426.07	231,875.45	89	88	40.16	–	73	88	-32.84	-47.84	2	HSA	–
IW-22C	Property	Y	No	BKH-276	08/30/18	–	–	80	79.82	39.20		64.82	79.82	-25.62	-40.62	2	Sonic	–
IW-23C	Property	Y	No	BKH-275	9/4-9/5/18	–	–	82	81	39.20		66.2	81.2	-27.00	-42.00	2	Sonic	–
IW-24C	Property	Y	No	BKH-282	09/07/18	–	–	81	81	39.30		65.4	80.4	-26.1	-41.1	2	Sonic	–
IW-25C	Property	Y	No	BKH-291	09/19/18	–	–	80	80.5	39.20		65.2	80.2	-26	-41	2	Sonic	
IW-26C	Property	Y	No	BKH-280	09/06/18	–	–	81	81	39.90		66	81	-26.10	-41.10	2	Sonic	–
IW-27C	Property	Y	No	BKH-285	9/10-9/11/18	–	–	91	90.8	50.90		40.5	75.3	10.4	-24.4	2	Sonic	–
IW-28C	Property	Y	No	BKH-292	09/17/18	–	–	93	93.7	51.70		43.4	78.3	8.3	-26.6	2	Sonic	–
Treatment Zone D Injection Wells																		
IW-1D	Property	Y	Yes	BKF-241	02/21/18	1,268,514.49	231,954.46	91.5	91.5	37.67	–	78.5	91.5	-40.83	-53.83	2	HSA	–
IW-2D	Property	Y	Yes	BKF-169	02/16/18	1,268,501.07	231,934.13	95	94	38.89	–	79	94	-40.11	-55.11	2	HSA	–
IW-3D	Property	Y	Yes	BKF-242	02/19/18	1,268,525.41	231,940.10	94	94	38.36	–	79	94	-40.64	-55.64	2	HSA	–
IW-4D	Property	Y	Yes	BKF-124	02/19/18	1,268,404.67	231,921.76	96	95	39.80	–	80	95	-40.2	-55.2	2	HSA	–
IW-5D	Property	Y	Yes	BKF-167	02/14/18	1,268,432.73	231,921.50	95	95	39.86	–	80	95	-40.14	-55.14	2	HSA	–
IW-6D	Property	Y	Yes	BKF-125	02/20/18	1,268,397.52	231,897.65	97	96	39.87	–	81	96	-41.13	-56.13	2	HSA	–
IW-7D	Property	Y	Yes	BKF-202	02/28/18	1,268,419.76	231,898.51	95	94.5	39.84	–	79.5	94.5	-39.66	-54.66	2	HSA	–
IW-8D	Property	Y	Yes	BKF-205	03/05/18	1,268,443.79	231,896.56	95	95	39.65	–	80	95	-40.35	-55.35	2	HSA	–
IW-9D	Property	Y	Yes	BKF-127	02/22/18	1,268,405.77	231,881.02	100	99	40.00	–	84	99	-44.00	-59.00	2	HSA	–
IW-10D	Property	Y	Yes	BKF-160	02/21/18	1,268,430.53	231,879.14	99	98	40.19	–	83	98	-42.81	-57.81	2	HSA	–

Table 1

Monitoring Well and Boring Completion Details
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Description of Location	Log?	Surveyed?	Well Tag	Dates Drilled	Easting	Northing	Depth		Elevation		Well Screen				Well Dia (in)	Drill Rig Type	Casing Depth (ft bgs)
								Total (ft bgs)	Well (ft bgs)	Ground (ft)	TOC (ft)	Depth		Elevation				
												Top	Bottom	Top	Bottom			
IW-11D	Property	Y	Yes	BKF-362	4/19/18-4/20/18	1,268,536.76	231,953.61	95	95	38.18	–	80	95	-41.82	-56.82	2	HSA	–
IW-12D	Property	Y	No	BKH-289	09/14/18	–	–	95	94.9	38.50	–	79.9	94.9	-41.4	-56.4	2	Sonic	–
IW-13D	Property	Y	No	BKH-290	09/18/18	–	–	95	94.5	39.20	–	80.2	95.2	-41	-56	2	Sonic	–
IW-14D	Property	Y	No	BKH-283	09/10/18	–	–	109	108.7	39.20	–	93.7	108.7	-54.5	-69.5	2	Sonic	–
IW-15D	Property	Y	No	BKH-286	09/11/18	–	–	109	109	51.80	–	93.7	108.7	-41.9	-56.9	2	Sonic	–
IW-16D	Property	Y	No	BKR-485	10/17-10/18/18	–	–	96	96.2	39.30	–	80.8	95.5	-41.5	-56.2	2	Sonic	–

Notes:

1. TOC = top of PVC casing
2. TOCs were surveyed relative to an arbitrary benchmarks prior to 2012. TOCs were resurveyed by Bush, Roed & Hitchings, Inc. (BR&H) of Seattle, Washington, in February, October, and December 2012 and March 2013, relative to the North American Vertical Datum of 1988 (NAVD 88). Selected wells were surveyed by BR&H to NAD83/91, Washington State Plane Coordinate System, North Zone (horizontal) and NAVD 88 (vertical) in January 2014.
3. bgs = below ground surface
4. – = not available or not applicable
5. ROW = right-of-way
6. HSA = hollow-stem auger; DP = direct-push probe; Sonic = rotosonic or rotary vibratory drilling
7. Casing depth = depth where casing or auger size was reduced, with the larger casing left in place during drilling
8. TBD = to be determined
9. 10-foot-long well screens assumed for MW-214, SCL-MW101, SCL-MW105, SCS-2, and SMW-3

Table 2

Hydraulic Conductivity Estimates from Slug Tests
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Well ID	Well Location	Well Screen Elevation (feet NAVD88)	Well Screen Depth (feet bgs)	Lithologic Unit in Screen Zone	Slug Test ID	Transmissivity (ft^2/day)	Hydraulic Conductivity (ft/day)	Average Hydraulic Conductivity (ft/day)	Average Hydraulic Conductivity (cm/sec)
Intermediate A Water-Bearing Zone									
MW107	8th Avenue North ROW	9.2 to 0.2	35 to 45	SM	MW107_Fall1	4.752	0.4752	0.4667	1.88E-05
					MW107_Rise1	4.582	0.4581		
MW108	Alley Between 8th and 9th Avenues North	-6.9 to -16.9	40 to 50	SP above SM	MW108_Fall1	108.5	10.85	12.77	4.51E-03
					MW108_Fall2	103.2	10.32		
					MW108_Rise1	153.9	15.39		
					MW108_Rise2	145.2	14.52		
MW109	Alley Between 8th and 9th Avenues North	0.7 to -9.3	35 to 45	SP	MW109_Fall2	74.04	7.404	7.621	2.69E-03
					MW109_Fall3	79.48	7.948		
					MW109_Rise2	71.12	7.112		
					MW109_Rise3	80.21	8.021		
MW110	Alley Between 8th and 9th Ave N	5.0 to -5.0	35 to 45	SM and ML	MW110_Fall1	11.53	1.153	1.213	4.28E-04
					MW110_Rise1	12.73	1.273		
MW114	SDOT Property South of Roy Street	11.4 to 1.4	35 to 45	SP with an interbed of SP	MW114_Fall1	5.729	0.5729	1.023	3.61E-04
					MW114_Rise1	9.655	0.9655		
					MW114_Rise2	15.29	1.529		
MW115	9th Avenue North ROW	-0.5 to -10.5	35 to 45	MH above SM, SP at base	MW115_Fall1	647.0	64.70	62.63	2.21E-02
					MW115_Fall2	591.4	59.14		
					MW115_Rise1	733.9	73.39		
					MW115_Rise2	533.0	53.30		
MW116	9th Avenue North ROW	-3.0 to -13.0	35 to 45	ML	MW116_Fall1	9.825	0.9825	0.8186	2.89E-04
					MW116_Fall2	8.447	0.8447		
					MW116_Rise1	7.176	0.7176		
					MW116_Rise2	7.295	0.7295		
Intermediate B Water-Bearing Zone									
MW111	Alley Between 8th and 9th Ave N	-33.2 to -43.2	70 to 80	GM	MW111_Fall1	5.0597	0.5060	0.5060	1.78E-04
W-MW-01	8th Avenue North ROW	-24.6 to -34.6	70 to 80	Unknown	WMW01_Fall1	0.1568	0.0157	0.0212	7.48E-06
					WMW01_Rise1	0.2670	0.0267		
W-MW-02	8th Avenue North ROW	-26.3 to -36.3	70 to 80	Unknown	WMW02_Fall2	6.25	0.6251	0.5812	2.05E-04
					WMW02_Rise2	5.37	0.5373		

Table 2

Hydraulic Conductivity Estimates from Slug Tests
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Well ID	Well Location	Well Screen Elevation (feet NAVD88)	Well Screen Depth (feet bgs)	Lithologic Unit in Screen Zone	Slug Test ID	Transmissivity (ft^2/day)	Hydraulic Conductivity (ft/day)	Average Hydraulic Conductivity (ft/day)	Average Hydraulic Conductivity (cm/sec)
Deep Water-Bearing Zone									
MW104	8th Avenue North ROW	-76 to -86	119 to 129	SP	MW104_Fall1	459.5	45.95	45.58	1.61E-02
					MW104_Fall2	421.2	42.12		
					MW104_Rise1	479.1	47.91		
					MW104_Rise2	463.6	46.36		
MW105	Roy Street ROW	-85.0 to -95.0	130 to 140	SP	MW105_Fall3	41.2	4.120	4.344	1.53E-03
					MW105_Rise3	45.7	4.567		
MW113	9th Avenue North ROW	-36.8 to -46.8	70 to 80	Unknown	MW113_Fall1	505.2	50.52	54.14	1.91E-02
					MW113_Fall2	220.6	22.06		
					MW113_Rise1	748.5	74.85		
					MW113_Rise2	691.4	69.14		

Notes:

1. Elevations in feet relative to the North American Vertical Datum of 1988 (NAVD 88)
2. Hydraulic conductivity calculated by using the well screen length (10 feet) for aquifer thickness
3. Analysis used Cooper, H.H., J.D. Bredehoeft, and I.S. Papadopulos, 1967, "Response of a finite-diameter well to an instantaneous charge of water, "Water Resources Research", volume 3, number 1, pages 263–269
4. bgs = below ground surface
6. ft^2/day = square feet per day
7. hydraulic conductivity = transmissivity/aquifer thickness
8. cm/sec = centimeters per second
9. GM = silty gravel, MH = plastic silt, ML = silt or sandy silt, SP = sand, and SM = silty sand; unknown where lack of recovery or no boring log available

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
Shallow Water Bearing Zone							
F5	Property	10 to 40	39.00	03/20/17	PES	4.02	34.98
				03/24/17	PES	NA	–
				04/14/17	PES	NA	–
				04/28/17	PES	NA	–
				05/05/17	PES	NA	–
				05/12/17	PES	NA	–
				05/19/17	PES	6.91	32.09
				06/12/17	PES	9.72	29.28
				10/11/17	PES	16.27	22.73
				03/14/19	PES	–	–
F9	Property	10 to 40	38.76	03/20/17	PES	4.40	34.36
				03/24/17	PES	5.01	33.75
				04/14/17	PES	4.98	33.78
				04/28/17	PES	6.01	32.75
				05/05/17	PES	6.14	32.62
				05/12/17	PES	6.80	31.96
				05/19/17	PES	7.16	31.60
				06/12/17	PES	10.46	28.30
				10/11/17	PES	17.73	21.03
				03/14/19	PES	4.09	–
F13	Property	10 to 40	38.69	03/20/17	PES	4.34	34.35
				03/24/17	PES	4.80	33.89
				04/14/17	PES	4.68	34.01
				04/28/17	PES	5.62	33.07
				05/05/17	PES	5.90	32.79
				05/12/17	PES	6.43	32.26
				05/19/17	PES	6.99	31.70
				06/12/17	PES	9.87	28.82
				10/11/17	PES	18.58	20.11
				03/14/19	PES	3.86	–
G12	Property	10 to 40	39.40	03/20/17	PES	5.29	34.11
				03/24/17	PES	5.74	33.66
				04/14/17	PES	5.89	33.51
				04/28/17	PES	7.10	32.30
				05/05/17	PES	7.18	32.22
				05/12/17	PES	7.89	31.51
				05/19/17	PES	8.32	31.08
				06/30/17	PES	13.58	25.82
				10/11/17	PES	18.68	20.72
				03/14/19	PES	5.85	–

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
G-MW2	Property	8 to 18		07/24/01	GeoEngineers	9.93	–
				01/29/09	DOF	10.76	–
			38.95	06/02/11	SES	7.45	31.50
				02/07/12	Windward	8.49	30.46
			39.00	09/06/12	SES	10.53	28.47
				12/21/12	SES	9.63	29.37
				03/29/13	SES	8.56	30.44
				Decommissioned			
J5	Property	10 to 40	39.95	03/20/17	PES	2.16	37.79
				03/24/17	PES	2.64	37.31
				04/14/17	PES	2.71	37.24
				04/28/17	PES	3.87	36.08
				05/05/17	PES	3.71	36.24
				05/12/17	PES	4.41	35.54
				05/19/17	PES	4.88	35.07
				06/12/17	PES	8.13	31.82
				10/11/17	PES	15.15	24.80
				03/14/19	PES	–	–
J15	Property	10 to 40	38.85	03/20/17	PES	4.90	33.95
				03/24/17	PES	5.35	33.50
				04/14/17	PES	5.55	33.30
				04/28/17	PES	6.82	32.03
				05/05/17	PES	6.82	32.03
				05/12/17	PES	6.74	32.11
				05/19/17	PES	6.24	32.61
				06/12/17	PES	11.30	27.55
				10/11/17	PES	18.29	20.56
				03/14/19	PES	5.05	33.80
K8	Property	10 to 40	40.39	03/20/17	PES	2.97	37.42
				03/24/17	PES	3.77	36.62
				04/14/17	PES	3.70	36.69
				04/28/17	PES	5.10	35.29
				05/05/17	PES	5.15	35.24
				05/12/17	PES	5.99	34.40
				05/19/17	PES	6.47	33.92
				06/12/17	PES	10.11	30.28
				10/11/17	PES	17.17	23.22
				03/14/19	PES	–	–
M15	Property	10 to 40	39.82	03/20/17	PES	5.22	34.60
				03/24/17	PES	5.75	34.07
				04/14/17	PES	5.97	33.85
				04/28/17	PES	7.24	32.58
				05/05/17	PES	7.40	32.42

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
M15 (continued)				05/12/17	PES	7.93	31.89
				05/19/17	PES	8.47	31.35
				06/12/17	PES	11.53	28.29
				10/11/17	PES	18.44	21.38
				03/14/19	PES	5.05	–
MW-1	800 Aloha Street Street Parcel	17.5 to 37.5	--	06/17/93	Retec	16.10	–
				Decommissioned on October 12, 1993			
MW-2	9th Avenue North ROW	27.5 to 37.5	--	06/17/93	Retec	15.55	–
				Decommissioned on October 12, 1993			
MW-3	800 Aloha Street Parcel	17.5 to 37.5	--	06/17/93	Retec	15.17	–
				Decommissioned on October 12, 1993			
MW-4	800 Aloha Street Parcel	22.5 to 32.5	--	06/17/93	Retec	15.80	–
				Decommissioned on October 12, 1993			
MW-5	8th Avenue North ROW	12.5 to 22.5	--	06/17/93	Retec	14.57	–
				Decommissioned on October 12, 1993			
MW-6	800 Aloha 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 Aloha Street 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
MW-8	800 Aloha Street 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
				03/20/17	PES	10.42	22.77
				03/24/17	PES	10.54	22.65
				06/12/17	PES	18.95	14.24
				03/14/19	PES	11.23	21.96
MW-9	8th Avenue North 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	SES	14.89	25.92
				02/07/12	Windward	16.39	24.42
				09/04/12	SES	16.84	23.97
				12/21/12	SES	15.94	24.87
				01/06/14	SES	13.99	26.82

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
MW-9 (continued)				03/20/17	PES	13.33	27.48
				03/24/17	PES	13.32	27.49
				04/14/17	PES	13.59	27.22
				04/28/17	PES	15.60	25.21
				05/05/17	PES	15.68	25.13
				05/12/17	PES	16.54	24.27
				05/19/17	PES	16.78	24.03
				06/12/17	PES	19.91	20.90
				10/11/17	PES	21.80	19.01
				03/14/19	PES	13.81	27.00
MW-10	800 Aloha 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
MW121	8th Avenue North ROW	15 to 25	41.72	01/06/14	SES	18.69	23.03
				03/20/17	PES	12.25	29.47
				03/24/17	PES	11.09	30.63
				04/14/17	PES	11.24	30.48
				04/28/17	PES	11.65	30.07
				05/05/17	PES	12.36	29.36
				05/12/17	PES	11.75	29.97
				05/19/17	PES	11.61	30.11
				06/12/17	PES	14.35	27.37
				10/11/17	PES	21.67	20.05
				03/14/19	PES	10.86	30.86
MW125	Valley Street ROW	15 to 30	43.55	01/06/14	SES	24.18	19.37
				03/20/17	PES	14.40	29.15
				03/24/17	PES	14.55	29.00
				06/28/17	PES	22.20	21.35
				10/11/17	PES	26.39	17.16
				03/14/19	PES	15.59	27.96
MW-154	Roy Street ROW	25 to 35	52.57	03/14/19	PES	20.81	31.76
MW-155	Roy Street ROW	20 to 30	44.05	03/14/19	PES	16.80	27.25
MW-159	8th Avenue North ROW	20 to 30	42.79	03/14/19	PES	14.70	28.09
MW214	Valley Street ROW	TD = 15	27.32	03/20/17	PES	6.84	20.48
				03/24/17	PES	7.67	19.65
				06/12/17	PES	16.45	10.87

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW214 (continued)				10/11/17	PES	dry	–
				03/14/19	PES	8.92	18.40
N7	Property	10 to 40	52.44	03/20/17	PES	NA	–
				03/24/17	PES	NA	–
				04/14/17	PES	18.70	33.74
				04/28/17	PES	16.98	35.46
				05/05/17	PES	17.10	35.34
				05/12/17	PES	17.51	34.93
				05/19/17	PES	18.02	34.42
				06/12/17	PES	20.93	31.51
				10/11/17	PES	27.13	25.31
				03/14/19	PES	14.72	–
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	SES	10.35	27.43
				06/02/11	SES	7.79	29.99
				02/07/12	Windward	8.98	28.80
				09/05/12	SES	10.11	27.67
				12/21/12	SES	8.44	29.34
				03/29/13	SES	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	SES	12.93	27.60
				06/02/11	SES	10.52	30.01
			41.74	02/07/12	Windward	11.61	30.13
				09/04/12	SES	12.64	29.10
				12/21/12	SES	10.84	30.90
				03/29/13	SES	9.85	31.89
				01/06/14	SES	dry	
				03/20/17	PES	6.20	35.54
				03/24/17	PES	6.55	35.19
				04/14/17	PES	6.56	35.18
				04/28/17	PES	7.35	34.39
				05/05/17	PES	7.87	33.87
				05/12/17	PES	8.12	33.62
				05/19/17	PES	8.55	33.19
				06/12/17	PES	11.26	30.48
				10/11/17	PES	dry	
				03/14/19	PES	6.39	35.35
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	SES	14.21	27.53

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
R-MW3 (continued)				06/02/11	SES	11.77	29.97
				02/07/12	Windward	12.90	28.84
				09/04/12	SES	14.00	27.74
				12/21/12	SES	12.09	29.65
				03/29/13	SES	11.17	30.57
				01/06/14	SES	16.35	25.39
				03/20/17	PES	7.34	34.40
				03/24/17	PES	7.66	34.08
				04/14/17	PES	7.68	34.06
				04/28/17	PES	8.46	33.28
				05/05/17	PES	8.78	32.96
				05/12/17	PES	9.20	32.54
				05/19/17	PES	9.48	32.26
				06/12/17	PES	12.48	29.26
				10/11/17	PES	16.45	25.29
				03/14/19	PES	7.41	34.33
R-MW4	Property	15 to 30	40.94	10/24/92	Roux	21.99	18.95
				Decommissioned before 2009			
R-MW5	Dexter Avenue North 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	SES	21.93	35.08
				06/02/11	SES	20.48	36.53
				02/07/12	Windward	21.61	35.40
			57.03	09/05/12	SES	23.72	33.31
				12/21/12	SES	22.55	34.48
				03/29/13	SES	21.72	35.31
				12/18/13	SES	28.59	28.44
				03/20/17	PES	17.92	39.11
				03/24/17	PES	18.29	38.74
				06/12/17	PES	21.58	35.45
				10/11/17	PES	26.31	30.72
				03/14/19	PES	18.18	38.85
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	SES	18.25	26.93
				05/03/10	SES	18.25	26.93
				06/02/11	SES	16.22	28.96
				02/07/12	Windward	14.11	31.07
			45.28	09/05/12	SES	19.38	25.90
				12/21/12	SES	15.27	30.01
				03/29/13	SES	17.18	28.10
				01/06/14	SES	22.58	22.70
				03/20/17	PES	11.49	33.79

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
R-MW6 (continued)				03/24/17	PES	11.82	33.46
				04/14/17	PES	12.37	32.91
				04/28/17	PES	13.41	31.87
				05/05/17	PES	13.60	31.68
				05/12/17	PES	13.99	31.29
				05/19/17	PES	14.21	31.07
				06/12/17	PES	17.08	28.20
				10/11/17	PES	dry	
				03/14/19	PES	12.24	33.04
SCL-MW101	Alley East of 800 Aloha Street	--	30.46	02/07/12	Windward	7.48	22.98
				01/06/14	SES	13.09	17.37
				03/20/17	PES	7.00	23.46
				03/24/17	PES	7.08	23.38
				06/14/17	PES	11.50	18.96
				10/11/17	PES	dry	
				03/14/19	PES	7.64	22.82
SCL-MW102	800 Aloha Street Parcel	--	--	02/07/12	Windward	7.89	–
SCL-MW105	Alley East of 800 Aloha Street	--	31.26	02/07/12	Windward	10.46	20.80
				01/06/14	SES	13.88	17.38
				03/20/17	PES	11.40	19.86
				03/24/17	PES	10.04	21.22
				06/12/17	PES	20.45	10.81
				10/11/17	PES	23.47	7.79
				03/14/19	PES	7.97	23.29
SCS-1	800 Aloha Street Parcel	Unknown	39.55	02/07/12	Windward	17.51	22.04
SCS-2	800 Aloha Street Parcel	Unknown	39.16	02/07/12	Windward	16.56	22.60
				03/20/17	PES	15.65	23.51
				03/24/17	PES	–	–
				06/12/17	PES	20.18	18.98
				03/14/19	PES	16.22	22.94
SCS-3	800 Aloha Street Parcel	Unknown	36.73	02/07/12	Windward	14.10	22.63
SCS-4	800 Aloha Street Parcel	Unknown	35.33	02/07/12	Windward	12.93	22.40
SCS-5	800 Aloha Street Parcel	Unknown	39.06	02/07/12	Windward	17.81	21.25
SMW-3	Valley Street ROW	Unknown	26.57	03/20/17	PES	–	–
				03/24/17	PES	17.75	8.82
				06/12/17	PES	10.95	15.62
				10/11/17	PES	12.71	13.86

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
SMW-3				03/14/19	PES	8.59	17.98
Intermediate "A" Water Bearing Zone							
BB-5	SDOT Property South of Roy Street	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	–
				Decommissioned			
BB-7	Westlake Avenue North 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	–
				Decommissioned			
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	SES	18.66	25.59

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
BB-8 (continued)				05/03/10	SES	19.90	24.35
				06/02/11	SES	17.64	26.61
				02/07/12	Windward	15.39	28.86
			44.26	09/05/12	SES	20.01	24.25
				12/21/12	SES	16.23	28.03
				03/29/13	SES	18.70	25.56
			43.69	01/06/14	SES	24.42	19.27
				06/16/15	SES	18.90	24.79
				03/20/17	PES	13.21	30.48
				03/24/17	PES	13.26	30.43
				06/12/17	PES	18.80	24.89
				10/11/17	PES	23.87	19.82
				03/14/19	PES	13.73	29.96
BB-12	9th Avenue North 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	SES	16.33	17.68
				05/02/10	SES	14.52	19.49
				Decommissioned			
BB-13	Westlake Avenue North 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	SES	9.50	18.15
				05/02/10	SES	9.13	18.52
				02/07/12	Windward	7.56	20.09
				Decommissioned			
BB-14	Valley Street ROW	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	–
				Decommissioned			
G-MW3	Property	26 to 36		07/24/01	GeoEngineers	13.05	–
				12/10/04	DOF	15.30	–

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
G-MW3 (continued)			39.55	01/29/09	DOF	13.49	–
				02/19/10	SES	12.83	26.72
				06/02/11	SES	11.00	28.55
				02/07/12	Windward	10.51	29.04
				09/06/12	SES	13.14	26.41
				12/21/12	SES	10.95	28.60
				03/29/13	SES	11.14	28.41
				Decommissioned			
GEI-1	Block 37	26.8 to 36.8	27.95	03/24/17	PES	8.63	19.32
				06/12/17	PES	21.91	6.04
				03/14/19	PES	9.64	18.31
MW107	8th Avenue North ROW	35 to 45	43.82	12/21/12	SES	17.28	26.54
				03/29/13	SES	18.28	25.54
				01/06/14	SES	26.74	17.08
				06/16/15	SES	17.78	26.04
				10/19/15	SES	19.88	23.94
				02/01/16	SES	12.85	30.97
				03/20/17	PES	11.80	32.02
				03/24/17	PES	12.20	31.62
				04/14/17	PES	12.31	31.51
				04/28/17	PES	14.12	29.70
				05/05/17	PES	14.34	29.48
				05/12/17	PES	14.85	28.97
				05/19/17	PES	15.03	28.79
				06/12/17	PES	18.62	25.20
				10/11/17	PES	25.10	18.72
				03/14/19	PES	12.84	30.98
MW108	Alley Between 8th and 9th Avenue	40 to 50	32.78	12/21/12	SES	13.43	19.35
				03/29/13	SES	15.76	17.02
				01/06/14	SES	21.44	11.34
				06/16/15	SES	15.53	17.25
				10/19/15	SES	17.16	15.62
				02/01/16	SES	16.31	16.47
				03/20/17	PES	12.53	20.25
				03/24/17	PES	12.61	20.17
				06/12/17	PES	28.13	4.65
				10/11/17	PES	29.02	3.76
				03/14/19	PES	13.46	19.32
MW109	Alley Between 8th and 9th Avenue	35 to 45	34.97	12/21/12	SES	15.80	19.17
				03/29/13	SES	18.39	16.58
				01/06/14	SES	24.74	10.23
				06/16/15	SES	18.06	16.91
				10/19/15	SES	19.80	15.17

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW109 (continued)				02/01/16	SES	19.04	15.93
				03/20/17	PES	15.00	19.97
				03/24/17	PES	15.00	19.97
				06/12/17	PES	31.53	3.44
				10/11/17	PES	32.17	2.80
				03/14/19	PES	15.87	19.10
MW110	Alley Between 8th and 9th Avenue	35 to 45	39.67	12/21/12	SES	20.01	19.66
				03/29/13	SES	22.95	16.72
				01/06/14	SES	30.48	9.19
				04/22/15	SES	22.59	17.08
				06/16/15	SES	22.72	16.95
				10/19/15	SES	24.57	15.10
				02/01/16	SES	23.30	16.37
				03/20/17	PES	19.10	20.57
				03/24/17	PES	18.95	20.72
				06/12/17	PES	34.70	4.97
				10/11/17	PES	36.46	3.21
				03/14/19	PES	20.18	19.49
MW114	SDOT Property South of Roy Street	35 to 45	45.84	12/21/12	SES	16.50	29.34
				03/29/13	SES	19.54	26.30
				01/06/14	SES	25.93	19.91
				Destroyed			
MW115	9th Avenue North ROW	35 to 45	34.14	12/21/12	SES	15.26	18.88
				03/29/13	SES	18.34	15.80
				01/06/14	SES	26.08	8.06
				04/22/15	SES	16.49	17.65
				06/16/15	SES	17.72	16.42
				10/19/15	SES	19.61	14.53
				02/01/16	SES	19.14	15.00
			34.10	03/20/17	PES	14.72	19.38
				03/24/17	PES	14.70	19.40
				06/12/17	PES	32.50	1.60
				10/11/17	PES	32.58	1.52
				03/14/19	PES	15.64	18.46
MW116	9th Avenue North ROW	35 to 45	31.36	12/21/12	SES	12.24	19.12
				03/29/13	SES	14.65	16.71
				01/06/14	SES	20.30	11.06
				06/16/15	SES	14.54	16.82
				10/19/15	SES	16.07	15.29
				02/01/16	SES	15.49	15.87
			31.34	03/20/17	PES	11.95	19.39
				03/24/17	PES	11.99	19.35
				04/14/17	PES	11.99	19.35

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
MW116 (continued)				04/28/17	PES	20.60	10.74
				05/05/17	PES	21.35	9.99
				05/12/17	PES	22.16	9.18
				05/19/17	PES	22.46	8.88
				06/12/17	PES	27.33	4.01
				10/11/17	PES	28.26	3.08
				03/14/19	PES	12.72	18.62
MW117	Dexter Avenue North ROW	40 to 55	56.90	02/08/13	SES	27.46	29.44
				03/29/13	SES	27.81	29.09
				01/06/14	SES	30.54	26.36
				Destroyed			
MW118	Mercer Street ROW	40 to 50	52.91	03/25/13	SES	27.18	25.73
				03/29/13	SES	27.49	25.42
				01/06/14	SES	29.81	23.10
				Destroyed			
MW119	9th Avenue North ROW	35 to 45	37.35	03/25/13	SES	22.21	15.14
				03/29/13	SES	22.52	14.83
				01/06/14	SES	32.12	5.23
				04/22/15	SES	21.12	16.23
				06/16/15	SES	21.12	16.23
				10/19/15	SES	23.50	13.85
				02/01/16	SES	22.99	14.36
			37.42	03/20/17	PES	17.40	19.95
				03/24/17	PES	17.45	19.90
				04/14/17	PES	17.91	19.44
				04/28/17	PES	27.14	10.21
				05/05/17	PES	28.25	9.10
				05/12/17	PES	29.25	8.10
				05/19/17	PES	29.68	7.67
				06/12/17	PES	35.73	1.62
				10/11/17	PES	39.94	2.59
				03/14/19	PES	18.79	18.56
MW120	8th Avenue North ROW	40 to 50	40.00	01/06/14	SES	22.80	17.20
				06/16/15	SES	18.10	21.90
				10/19/15	SES	19.91	20.09
				02/01/16	SES	16.98	23.02
				03/20/17	PES	16.50	23.50
				03/24/17	PES	15.24	24.76
				06/12/17	PES	23.65	16.35
				10/11/17	PES	26.99	13.01
				03/14/19	PES	16.06	23.94
MW127	8th Avenue North ROW	40 to 50	39.04	01/06/14	SES	22.09	16.95
				Decommissioned			

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW131	Property	45 to 55	39.39	03/20/17	PES	9.73	29.66
				03/24/17	PES	10.11	29.28
				04/14/17	PES	10.31	29.08
				04/28/17	PES	12.10	27.29
				05/05/17	PES	13.10	26.29
				05/12/17	PES	12.69	26.7
				05/19/17	PES	12.84	26.55
				06/12/17	PES	15.77	23.62
				10/11/17	PES	20.75	18.64
				03/14/19	PES	8.48	30.91
MW-142	8th Avenue North ROW	40-50	42.12	03/14/19	PES	15.42	26.70
MW-144	8th Avenue North ROW	40-50	43.50	03/14/19	PES	14.07	29.43
MW-146	Roy Street ROW	40-50	52.34	03/14/19	PES	19.89	32.45
MW-149	Property	35-45	35.22	03/14/19	PES	3.15	32.07
MW-151	Property	35-45	39.38	03/14/19	PES	3.35	36.03
MW-156	8th Avenue North ROW	40-50	41.24	01/24/19	PES	15.06	26.18
				03/14/19	PES	15.72	25.52
Intermediate "B" Water Bearing Zone							
G-MW1	Property	30 to 35		07/24/01	GeoEngineers	10.54	–
				01/29/09	DOF	11.25	–
			39.01	02/19/10	SES	10.47	28.54
				06/03/11	SES	8.15	30.86
				02/07/12	Windward	9.34	29.67
				09/06/12	SES	11.11	27.90
				12/21/12	SES	9.04	29.97
				03/29/13	SES	10.11	28.90
				Decommissioned			
MW111	Alley Between 8th and 9th Avenue	70 to 80	36.48	12/21/12	SES	17.45	19.03
				03/29/13	SES	20.17	16.31
				01/06/14	SES	26.54	9.94
				04/22/15	SES	20.05	16.43
				06/16/15	SES	19.90	16.58
				10/19/15	SES	21.67	14.81
				02/01/16	SES	21.25	15.23
				03/20/17	PES	18.24	18.24
				03/24/17	PES	16.82	19.66
				06/12/17	PES	25.23	11.25
				10/11/17	PES	33.74	2.74

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW111				03/14/19	PES	18.36	18.12
MW112	Dexter Avenue North ROW	75 to 85	57.49	12/21/12	SES	42.45	15.04
				03/29/13	SES	38.76	18.73
				01/06/14	SES	40.79	16.70
				06/16/15	SES	39.40	18.09
			57.45	03/20/17	PES	36.65	20.80
				03/24/17	PES	36.46	20.99
				06/12/17	PES	38.72	18.73
				10/11/17	PES	40.46	16.99
				03/14/19	PES	36.62	20.83
MW126	Alley Between 8th and 9th Avenue	85 to 95	30.94	01/06/14	SES	18.08	12.86
				03/20/17	PES	12.75	18.19
				03/24/17	PES	13.35	17.59
				06/12/17	PES	24.98	5.96
				10/11/17	PES	24.24	6.70
				03/14/19	PES	12.88	18.06
MW130	Property	70 to 80	39.55	03/20/17	PES	21.21	18.34
				03/24/17	PES	22.54	17.01
				04/14/17	PES	23.35	16.20
				04/28/17	PES	23.89	15.66
				05/05/17	PES	23.30	16.25
				05/12/17	PES	23.65	15.90
				05/19/17	PES	23.81	15.74
				06/12/17	PES	24.28	15.27
				10/11/17	PES	26.39	13.16
				03/14/19	PES	21.86	17.69
MW-132	Property	70 to 80	40.07	10/11/17	PES	28.11	11.96
				03/14/19	PES	17.32	22.75
MW-134	Property	80 to 90	41.05	10/11/17	PES	29.93	11.12
				03/14/19	PES	22.89	18.16
MW-135	Property	70 to 80	38.96	10/11/17	PES	23.48	15.48
				03/14/19	PES	13.62	25.34
MW-136	Property	84.6 to 94.6	51.45	10/11/17	PES	39.13	12.32
				03/14/19	PES	33.70	17.75
MW-139	Property	70 to 80	39.44	10/11/17	PES	25.73	13.71
				03/14/19	PES	15.45	23.99
W-MW-01	8th Avenue North ROW	70 to 80	44.88	02/07/12	Windward	21.22	23.66
				09/06/12	SES	23.26	21.62
				12/21/12	SES	21.82	23.06
				03/29/13	SES	23.63	21.25
				01/06/14	SES	28.96	15.92

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
W-MW-01 (continued)				06/16/15	SES	24.60	20.28
				10/19/15	SES	26.86	18.02
				02/01/16	SES	25.26	19.62
				03/20/17	PES	21.02	23.86
				03/24/17	PES	21.85	23.03
				04/14/17	PES	22.11	22.77
				04/28/17	PES	25.09	19.79
				05/05/17	PES	25.33	19.55
				05/12/17	PES	25.88	19.00
				05/19/17	PES	26.09	18.79
				06/12/17	PES	29.15	15.73
				10/11/17	PES	31.50	13.38
				03/14/19	PES	21.77	23.11
MW-143	8th Avenue North ROW	70-80	42.04	03/14/19	PES	18.29	23.75
MW-145	8th Avenue North ROW	70 to 80	43.46	03/14/19	PES	26.55	16.91
MW-147	Roy Street ROW	70 to 80	51.85	03/14/19	PES	25.65	26.20
MW-148	Roy Street ROW	70 to 80	43.91	03/14/19	PES	24.31	19.60
MW-150	Property	49 to 59	35.39	03/14/19	PES	3.58	31.81
MW-152	Property	50 to 60	39.11	03/14/19	PES	5.21	33.90
MW-157	8th Avenue North ROW	70 to 80	41.22	01/24/19	PES	14.00	27.22
				03/14/19	PES	14.94	26.28
W-MW-02	8th Avenue North ROW	70 to 80	43.46	02/07/12	Windward	17.51	25.95
				09/05/12	SES	19.95	23.51
				12/21/12	SES	17.82	25.64
				03/29/13	SES	19.14	24.32
				01/06/14	SES	24.40	19.06
				06/16/15	SES	18.79	24.67
				10/19/15	SES	20.94	22.52
				02/01/16	SES	15.85	27.61
				03/20/17	PES	15.24	28.22
				03/24/17	PES	14.97	28.49
				04/14/17	PES	15.34	28.12
				04/28/17	PES	18.18	25.28
				05/05/17	PES	18.53	24.93
				05/12/17	PES	19.10	24.36

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
W-MW-02 (continued)				05/19/17	PES	19.28	24.18
				06/12/17	PES	22.83	20.63
				10/11/17	PES	27.86	15.60
				03/14/19	PES	15.46	29.42
W-MW-03	Property	70 to 80	39.23	02/07/12	Windward	17.73	21.50
				09/06/12	SES	18.36	20.87
				12/21/12	SES	18.19	21.04
				03/29/13	SES	18.22	21.01
				Decommissioned			
W-MW-04**	Property	68 to 77	35.53	02/07/12	Windward	14.13	22.72
				09/06/12	SES	16.73	20.37
				12/21/12	SES	16.69	20.40
				03/29/13	SES	16.90	20.21
				Decommissioned			
Deep Water Bearing Zone							
FMW-131	Block 37	63 to 73	27.85	03/24/17	PES	9.56	18.29
				06/12/17	PES	32.94	5.09
				03/14/19	PES	10.26	17.59
FMW-3D	Block 31	59 to 69	27.88	03/24/17	PES	9.58	18.30
				06/12/17	PES	30.87	2.99
				Decommissioned			
GEI-2	Block 37	50.5 to 60.5	29.38	03/24/17	PES	10.96	18.42
				06/12/17	PES	37.60	8.22
				03/14/19	PES	11.70	17.68
MW101	Property	105 to 115	39.49	09/06/12	SES	21.48	18.01
				12/21/12	SES	21.14	18.35
				03/29/13	SES	22.22	17.27
				Decommissioned			
MW102	Property	115 to 125	49.19	09/05/12	SES	31.11	18.08
				12/21/12	SES	30.78	18.41
				03/29/13	SES	31.65	17.54
				01/06/14	SES	33.80	15.39
				10/19/15	SES	37.06	12.13
				02/01/16	SES	38.22	10.97
				03/20/17	PES	32.25	16.94
				03/24/17	PES	33.50	15.69
				04/14/17	PES	34.38	14.81
				04/28/17	PES	35.18	14.01
				05/05/17	PES	34.77	14.42
				05/12/17	PES	35.00	14.19
				05/19/17	PES	35.21	13.98

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW102 (continued)				06/12/17	PES	36.87	12.32
				10/11/17	PES	37.59	11.60
				03/14/19	PES	31.94	17.25
MW103	Alley Between 8th and 9th Avenue	103.5 to 113.5	35.92	09/05/12	SES	18.03	17.89
				12/21/12	SES	17.38	18.54
				03/29/13	SES	19.70	16.22
				01/06/14	SES	26.45	9.47
				06/16/15	SES	20.03	15.89
				10/19/15	SES	22.31	13.61
				02/01/16	SES	22.40	13.52
				03/20/17	PES	17.10	18.82
				03/24/17	PES	17.36	18.56
				04/14/17	PES	17.68	18.24
				04/28/17	PES	25.82	10.10
				05/05/17	PES	26.17	9.75
				05/12/17	PES	26.71	9.21
				05/19/17	PES	27.99	7.93
				06/12/17	PES	30.85	5.07
				10/11/17	PES	30.31	5.61
				03/14/19	PES	17.75	18.17
MW104	8th Avenue North ROW	119 to 129	42.68	09/06/12	SES	24.72	17.96
				12/21/12	SES	24.31	18.37
				03/29/13	SES	25.78	16.90
				01/06/14	SES	28.87	13.81
				10/19/15	SES	30.04	12.64
				02/01/16	SES	30.90	11.78
				03/20/17	PES	25.00	17.68
				04/14/17	PES	26.58	16.10
				04/28/17	PES	30.11	12.57
				05/05/17	PES	30.71	11.97
				05/12/17	PES	30.43	12.25
				05/19/17	PES	30.60	12.08
				06/30/17	PES	33.10	9.58
				10/11/17	PES	32.69	9.99
				03/14/19	PES	25.00	17.68
MW105	Roy Street ROW	130 to 140	44.69	09/05/12	SES	26.85	17.84
				12/21/12	SES	26.26	18.43
				03/29/13	SES	28.47	16.22
			44.17	01/06/14	SES	32.48	11.69
				04/02/15	SES	28.56	15.61
				06/16/15	SES	28.59	15.58
				10/19/15	SES	31.15	13.02
				02/01/16	SES	31.58	12.59

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation[b]
MW105 (continued)				03/20/17	PES	25.86	18.31
				03/24/17	PES	26.22	17.95
				04/14/17	PES	26.71	17.46
				04/28/17	PES	34.10	10.07
				05/05/17	PES	34.40	9.77
				05/12/17	PES	34.91	9.26
				05/19/17	PES	35.39	8.78
				06/12/17	PES	38.85	5.32
				10/11/17	PES	38.22	5.95
				03/14/19	PES	26.33	17.84
MW106	SDOT Property South of Roy Street	130 to 140	51.99	09/05/12	SES	34.09	17.90
				03/29/13	SES	34.92	17.07
				01/06/14	SES	37.15	14.84
				10/19/15	SES	40.11	11.88
				02/01/16	SES	41.02	10.97
				04/14/17	PES	36.78	15.21
				06/30/17	PES	40.60	11.39
				03/14/19	PES	34.64	17.35
MW113	9th Avenue North ROW	70 to 80	32.94	12/21/12	SES	14.15	18.79
				03/29/13	SES	16.95	15.99
				01/06/14	SES	23.35	9.59
				06/16/15	SES	16.46	16.48
				10/19/15	SES	18.24	14.70
				02/01/16	SES	17.87	15.07
			32.90	03/20/17	PES	13.60	19.30
				03/24/17	PES	13.65	19.25
				04/14/17	PES	13.80	19.10
				04/28/17	PES	24.10	8.80
				05/05/17	PES	24.94	7.96
				05/12/17	PES	25.68	7.22
				05/19/17	PES	26.01	6.89
				06/12/17	PES	31.15	1.75
				10/11/17	PES	31.00	1.90
				03/14/19	PES	14.52	18.38
MW122	Alley Between 8th and 9th Avenue	105 to 119	30.03	01/06/14	SES	17.61	12.42
				10/19/15	SES	15.59	14.44
				02/01/16	SES	15.75	14.28
				03/20/17	PES	11.62	18.41
				03/24/17	PES	11.57	18.46
				04/14/17	PES	11.76	18.27
				04/28/17	PES	19.98	10.05
				05/05/17	PES	20.43	9.60
				05/12/17	PES	20.94	9.09

Table 3

Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW122 (continued)				05/19/17	PES	21.30	8.73
				06/12/17	PES	25.23	4.80
				10/11/17	PES	24.93	5.10
				03/14/19	PES	11.99	18.04
MW123	Westlake Avenue North ROW	70 to 80	27.51	01/06/14	SES	15.69	11.82
				03/20/17	PES	8.50	19.01
				03/24/17	PES	8.60	18.91
				06/12/17	PES	24.68	2.83
				10/11/17	PES	24.43	3.08
				03/14/19	PES	9.32	18.19
MW124	Valley Street ROW	110 to 120	56.24	01/06/14	SES	40.50	15.74
				03/20/17	PES	39.33	16.91
				03/24/17	PES	40.59	15.65
				04/14/17	PES	41.54	14.70
				04/28/17	PES	41.81	14.43
				05/05/17	PES	41.28	14.96
				05/12/17	PES	41.52	14.72
				05/19/17	PES	41.60	14.64
				06/12/17	PES	42.95	13.29
				10/11/17	PES	43.95	12.29
				03/14/19	PES	38.98	17.26
MW128	Westlake Avenue North	60 to 70	No TOC	04/22/15	SES	12.91	–
				10/19/15	SES	14.15	–
				02/01/16	SES	14.23	–
			28.59	03/20/17	PES	10.00	18.59
				03/24/17	PES	10.04	18.55
				04/14/17	PES	10.13	18.46
				04/28/17	PES	25.30	3.29
				05/05/17	PES	26.35	2.24
				05/12/17	PES	27.06	1.53
				05/19/17	PES	27.44	1.15
				06/12/17	PES	33.41	-4.82
				10/11/17	PES	30.51	-1.92
				03/14/19	PES	10.79	17.80
FMW-129	SDOT Property South of Roy Street	84 to 89	No TOC	10/19/15	SES	25.20	–
				02/01/16	SES	25.25	–
			38.31	04/14/17	PES	19.78	18.53
				04/28/17	PES	25.30	13.01
				05/05/17	PES	29.55	8.76
				05/12/17	PES	30.25	8.06
				05/19/17	PES	30.74	7.57
				06/12/17	PES	34.90	3.41
				03/14/19	PES	20.11	18.20

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Summary of Groundwater Elevations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Screen Interval (ft below TOC)	Top of Casing Elevation (feet)	Sample Date	Measured By	Depth to Groundwater[a]	Groundwater Elevation [b]
MW-133	Property	129 to 139	39.77	10/11/17 03/14/19	PES PES	27.57 22.62	12.20 17.15
MW-137	Property	105 to 115	51.46	10/11/17 03/14/19	PES PES	39.66 33.99	11.80 17.47
MW-138	Dexter Ave N	105 to 115	57.06	10/11/17 03/14/19	PES PES	44.78 39.75	12.28 17.31
MW-140	Roy Street	129.5 to 139.5	50.20	10/11/17	PES	39.55	10.65
MW-141	Property	95 to 105	39.32	10/11/17 03/14/19	PES PES	29.40 21.80	9.92 17.52
MW-153	Roy Street ROW	120 to 130	54.35	03/14/19	PES	37.27	17.08
MW-158A	8th Avenue North ROW	90 to 100	41.09	01/24/19 03/14/19	PES PES	22.98 23.15	18.11 17.94
MW-160	8th Avenue North ROW	118 to 128	43.46	03/14/19	PES	24.70	18.76
MW-161	8th Avenue North ROW	130 to 140	43.82	03/14/19	PES	26.50	17.32
MW-162	Property	100 to 110	–	03/14/19	PES	19.58	–
MW-163	Property	100 to 110	–	03/14/19	PES	21.61	–
MW-164	Property	100 to 110	–	03/14/19	PES	22.26	–
TB-18	SDOT Property S of Roy St	93 to 118	--	06/04/98 Decommissioned	B&V	30.05	–

NOTES:

TOCs were surveyed relative to an established datum of 521.41 feet prior to 2012. TOCs were resurveyed by Axis Survey and Mapping of Kirkland, WA 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, WA in February, October, and December 2012 and March 2013 using the North American Vertical Datum 1988.

[a] As measured in feet below a fixed spot on the well casing rim.

[b] Calculated by subtracting the depth to groundwater from the casing elevation. Groundwater elevation in angled monitoring well calculated subtracting the product of the measured depth to groundwater in the angled well by the sine of its angle.

**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.

-- = unknown
ROW = right-of-way
TOC = top of casing
B&V = Black & Veach
DOF = Dalton, Olmsted & Fuglevand, Inc.
EPJ = E.P. Johnson Construction, Inc.
TD = Total Depth
PES = PES Environmental, Inc.
GeoEngineers = GeoEngineers, Inc.
Retec = Remediation Technologies, Inc.
Roux = Roux Associates
SES = SoundEarth Strategies, Inc.
Urban = Urban Redevelopment

Table 4

Summary of Data Gaps
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Data Gap Number	Data Gap	Location	Primary Media	Constituents	Data Gap Investigations	
					Locations Addressing Data Gaps	Rationale
1	Definition of the lateral and vertical extent of the Site CVOC groundwater plume and CVOCs in Site soil, with CVOC concentrations in the farthest wells below the cleanup levels	Site wide	Soil and Groundwater	CVOCs	MW-301 through MW-330	Soil and groundwater sampling in the shallow, intermediate, deep zone wells to fill in gaps in the monitoring network; data to be used in conjunction with current results from the existing well network
2	Documentation of the variability of groundwater levels seasonally and during construction-related groundwater extraction	Site wide	Groundwater	Not Applicable	All new wells and all available existing monitoring wells Site wide	Evaluate the variability of vadose zone thickness, groundwater flow direction, and groundwater flow rate; quarterly groundwater levels in all wells and continual groundwater levels in selected wells distributed in intermediate and deep zone wells across the Site
3	Evaluation of the seasonal variability of groundwater quality	Site wide	Groundwater	CVOCs, GRO, MNA	All wells in the monitoring network	Evaluate the range of CVOC concentrations potentially due to seasonal variability across the Site and provide sufficient data for determining IHSs
4	Collection of additional hydraulic conductivity data across the extent of the plume	Site wide	Soil	Physical Parameters	Representative locations and lithologies will be evaluated	Provide sufficient data (derived from slug tests and grain size) to allow evaluation of contaminant fate and transport and to support development of final cleanup actions
5	Collection of additional lithologic data during the drilling of new borings or wells	Site wide	Soil	Not Applicable	MW-301 through MW-330	Data will be used to update the Site lithologic model, lithologic cross sections, and conceptual site model
6	Collection of transport and remediation parameter data	Site wide	Soil	foc, bulk density	Representative locations and lithologies will be evaluated	Provide sufficient data to allow evaluation of contaminant fate and transport and to support development of final cleanup actions
7	Investigation of the groundwater to surface water pathway	Site wide	Groundwater	CVOCs	Wells between the Property and Lake Union, including new wells MW-308 through MW-314, MW-317 through MW-324, MW-327, and MW-328	New wells located along flowpaths likely leading to Lake Union; data to be used in conjunction with data from existing wells to evaluate fate and transport of CVOCs between the Property and Lake Union
8	Presentation and transmittal to Ecology of the geochemical parameter data	Site wide	Groundwater	MNA	Site wide	Collect sufficient geochemical data Site wide to demonstrate the geochemical conditions in the various water-bearing zones, with data entered in the EIM database consistent with the Agreed Order
9	Preparation of a groundwater monitoring plan assessing the stability of the CVOC plume	Site wide	Groundwater	CVOCs, MNA	Site wide	Collect sufficient groundwater CVOC and geochemical data to allow the evaluation of the nature, extent, variability, and trend of the plume at the Site
10	Demonstration of how cleanup levels will be met through the intermediate and deep aquifers	Site wide	Groundwater	CVOCs, MNA	Site wide	This data gap will be addressed by implementation of this RI/FS
11	Completion of the vapor intrusion evaluation	At all properties where groundwater exceeds the VI screening levels, including at the Aloha Street Shops	Soil Vapor Indoor Air	CVOCs, GRO	New shallow monitoring wells MW-301, MW-305, MW-310, MW-312, MW-313, and MW-320, existing shallow wells around the Property, and existing soil vapor monitoring points SV01, SV02, and SV03	Evaluate shallow groundwater near and downgradient of the Property and in existing soil vapor monitoring probes consistent with Ecology's guidance for evaluating soil vapor intrusion (Tier I evaluation)

Notes:
1. GRO = gasoline range organics
2. CVOCs = chlorinated volatile organic compounds
3. MNA = monitored natural attenuation parameters
4. Physical parameters include grain size, vertical hydraulic conductivity, and dry bulk density, as appropriate
5. Property = Former American Linen Supply property
6. Site wide = extent of media impacted by contaminants from the Property

Table 5

Summary of 2017 Monitoring and Investigation
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well or Boring	Area Location	Groundwater Monitoring							New Boring and Monitoring Well Installations										
		Water Level Monitoring			Monitoring Well Sampling				Soil Samples								Reconnaissance Groundwater Samples		
									Chemical Analysis			Physical Analysis							
		Periodic	Extraction Monitoring		Groundwater Laboratory Analyses				Sample Depth			Sample Depth	Grain	Bulk			Sample Depth	Laboratory Analyses	
		Events	Continuous Monitoring	Periodic Events	GRO	VOCs	MNA	Field	(ft bgs)	GRO	VOCs	(ft bgs)	Size	Density	f_{oc}	Vertical K	(ft bgs)	GRO	VOCs
Shallow Zone Wells																			
MW-8	800 Roy St Parcel	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW-9	8th Ave N ROW	X	–	X	X	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW121	8th Ave N ROW	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW125	Valley Street ROW	X	–	X	X	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW214	Valley Street ROW	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
SCS-2	Seattle City Light Parking Lot	X	–	–	X	X	–	X	–	–	–	–	–	–	–	–	–	–	–
SMW-3	Valley Street ROW	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
SCL-MW101	Alley Between 8th & 9th Ave	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
SCL-MW105	Alley Between 8th & 9th Ave	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
R-MW2	Property	X	–	X	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
R-MW3	Property	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–	–	–	–
R-MW5	Dexter Ave N ROW	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
R-MW6	Property	X	–	X	X	X	X	X	–	–	–	–	–	–	–	–	–	–	–
F5	Property	X	–	X	X	X	–	X	–	–	–	–	–	–	–	–	–	–	–
F9	Property	X	–	X	X	X	–	X	–	–	–	–	–	–	–	–	–	–	–
F13	Property	X	–	X	X	X	X	X	–	–	–	–	–	–	–	–	–	–	–
G12	Property	X	–	X	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
J5	Property	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
J15	Property	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
K8	Property	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
M15	Property	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
N7	Property	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
Intermediate A Zone Wells																			
GEI-1	Block 37	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW107	8th Ave N ROW	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW108	Alley Between 8th & 9th Ave	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW109	Alley Between 8th & 9th Ave	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW110	Alley Between 8th & 9th Ave	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW115	9th Ave N ROW	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW116	9th Ave N ROW	X	X	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW119	South Adjoining Property	X	X	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW120	8th Ave N ROW	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW131	South part of the Property	X	–	X	X	X	X	X	–	–	–	–	–	–	–	–	–	–	–
BB-8	Roy Street ROW	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
Intermediate B Zone Wells																			
W-MW-01	8th Ave N ROW	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
W-MW-02	8th Ave N ROW	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW111	Alley Between 8th & 9th Ave	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW112	Dexter Ave N ROW	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW126	Alley Between 8th & 9th Ave	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–

Table 5

Summary of 2017 Monitoring and Investigation
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well or Boring	Area Location	Groundwater Monitoring							New Boring and Monitoring Well Installations										
		Water Level Monitoring			Monitoring Well Sampling				Soil Samples								Reconnaissance Groundwater Samples		
									Chemical Analysis			Physical Analysis							
		Periodic Events	Extraction Monitoring: Continuous Monitoring	Extraction Monitoring: Periodic Events	Groundwater Laboratory Analyses: GRO	VOCs	MNA	Field	Sample Depth (ft bgs)	GRO	VOCs	Sample Depth (ft bgs)	Grain Size	Bulk Density	f_{oc}	Vertical K	Sample Depth (ft bgs)	Laboratory Analyses: GRO	VOCs
MW130	West part of the Property	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW-132	Center of the Property	–	–	–	X	X	–	X	20, 35, 50, 55, 60, 70, 83	X	X	53, 82	X	–	X	–	–	–	–
MW-134	Northeast part of the Property	–	–	–	X	X	–	X	20, 43, 50, 60, 70, 80, 90	X	X	–	–	–	–	–	–	–	–
MW-135	North-central part of the Property	–	–	–	X	X	–	X	14, 20, 30, 36, 40, 45, 55, 65, 80	X	X	60	X	X	–	X	–	–	–
MW-136	Southwest corner of the Property	–	–	–	X	X	–	X	35, 44, 50, 65, 75, 85, 95	–	X	77	X	–	–	–	–	–	–
MW-139	South-central part of the Property	–	–	–	X	X	–	X	20, 31, 41, 51, 60, 70, 80	–	X	80	X	–	–	–	–	–	–
Deep Zone Wells																			
FMW-3D	Block 31	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
FMW-129	Roy Street ROW	X	X	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
FMW-131	Block 37	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
GEI-2	Block 37	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW102	Valley Street ROW	X	X	X	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW103	Alley Between 8th & 9th Ave	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW104	8th Ave N ROW	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW105	Roy Street ROW	X	X	X	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW106	West of Roy St	X	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW113	9th Ave N ROW	X	X	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW122	Alley East of 800 Roy St	X	X	X	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW123	Westalke Ave N ROW	X	–	–	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW124	Valley Street ROW	X	–	X	–	X	–	X	–	–	–	–	–	–	–	–	–	–	–
MW128	Westlake Ave N ROW	X	–	X	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–
MW-133	West part of the Property	–	–	–	X	X	–	X	20, 35, 45, 55, 58, 65, 75, 85, 95, 105, 120, 130, 135, 141	X	X	106	X	–	–	–	80 - 82, 90 - 92	X	X
MW-137	South-central part of the Property	–	–	–	X	X	–	X	25, 45, 75, 85, 95, 115	X	X	50, 90, 115	X	–	X	–	76 - 78, 107 - 109	X	X
MW-138	Dexter Ave N ROW	–	–	–	X	X	–	X	15, 25, 35, 45, 56, 65, 75, 85, 95, 105, 115	–	X	115	X	–	–	–	115 - 117	–	X
MW-140	Roy Street ROW	–	–	–	X	X	–	X	15, 25, 35, 45, 55, 65, 75, 90, 110, 130, 140	–	X	80, 90	X	X	–	X	–	–	–
MW-141	Roy Street ROW	–	–	–	X	X	–	X	15, 35, 46, 56, 65, 75, 85, 95, 105	–	X	–	–	–	–	–	105 - 107	–	X
Temporary Borings																			
B-201	Property	–	–	–	–	–	–	–	10, 30, 35	–	X	30	X	–	–	–	–	–	–
B-202	Property	–	–	–	–	–	–	–	5, 20, 50	X	X	10, 45	X	–	–	–	–	–	–
B-203	Property	–	–	–	–	–	–	–	5, 25, 40, 50, 80	X	X	30, 75	X	–	–	–	–	–	–
B-204	Property	–	–	–	–	–	–	–	20, 40, 45	–	X	40	X	–	–	–	–	–	–
B-205	Property	–	–	–	–	–	–	–	10, 55, 65, 75	X	X	63, 79	X	–	X	–	40 - 42	X	X
B-206	Property	–	–	–	–	–	–	–	15, 30, 40, 49, 52, 56, 59, 70, 80	X	X	47, 50	X	X	–	X	–	–	–
B-207	Property	–	–	–	–	–	–	–	30, 41, 49, 55, 60, 70, 80, 90	X	X	50, 52	X	–	X	–	–	–	–
B-208	Property	–	–	–	–	–	–	–	20, 35, 50, 60, 70, 80	–	X	56	X	–	–	–	–	–	–
B-209	Property	–	–	–	–	–	–	–	20, 35, 50, 60, 70, 75, 80	–	X	57, 73	X	–	X	–	–	–	–
B-210	Property	–	–	–	–	–	–	–	6, 15, 20, 35, 46, 60, 70, 80	X	X	60	X	–	–	–	–	–	–
B-211	Property	–	–	–	–	–	–	–	20, 35, 50, 57, 60, 65, 70, 80, 90, 100, 110, 120	–	X	83	X	–	–	–	120 - 122	X	X
B-212	Dexter Ave N ROW	–	–	–	–	–	–	–	15, 21, 35, 45, 55, 65, 75, 85, 95, 100	X	X	54	X	–	–	–	–	–	–
B-213	Dexter Ave N ROW	–	–	–	–	–	–	–	15, 22, 35, 45, 55, 65, 75, 85, 95, 105, 115, 125	–	X	99, 125	X	–	X	–	90 - 92	X	X
B-214	Dexter Ave N ROW	–	–	–	–	–	–	–	15, 25, 35, 45, 55, 65, 75, 85, 95, 105, 115, 120	–	X	–	–	–	–	–	–	–	–

Table 5

Summary of 2017 Monitoring and Investigation
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well or Boring	Area Location	Groundwater Monitoring							New Boring and Monitoring Well Installations										
		Water Level Monitoring			Monitoring Well Sampling				Soil Samples									Reconnaissance Groundwater Samples	
									Chemical Analysis			Physical Analysis							
		Periodic Events	Extraction Monitoring		Groundwater Laboratory Analyses				Sample Depth (ft bgs)	GRO	VOCs	Sample Depth (ft bgs)	Grain Size	Bulk Density	f_{oc}	Vertical K		Sample Depth (ft bgs)	Laboratory Analyses	
			Continuous Monitoring	Periodic Events	GRO	VOCs	MNA	Field											GRO	VOCs
B-215	Roy Street ROW	–	–	–	–	–	–	–	15, 25, 35, 45, 55, 65, 75, 85, 95	–	X	–	–	–	–	–		–	–	–
B-216	Property	–	–	–	–	–	–	–	20, 40, 55, 65, 85, 95	–	X	76	X	–	–	–		–	–	–
B-217	Property	–	–	–	–	–	–	–	15, 25, 35, 42, 55, 65, 75, 85, 95, 106, 115	–	X	97	X	–	–	–		–	–	–
B-218	Property	–	–	–	–	–	–	–	12.5, 19, 25, 40, 50	–	X	–	–	–	–	–		–	–	–
B-219	Property	–	–	–	–	–	–	–	42, 50, 60, 70, 80	–	X	73	X	–	–	–		–	–	–
B-220	Property	–	–	–	–	–	–	–	15, 29, 32, 40, 50	–	X	–	–	–	–	–		–	–	–
B-221	Property	–	–	–	–	–	–	–	16, 22, 33, 37, 45, 50, 60, 70	–	X	–	–	–	–	–		–	–	–
B-222	Property	–	–	–	–	–	–	–	17, 25, 34, 42, 50	–	X	–	–	–	–	–		–	–	–
B-223	Property	–	–	–	–	–	–	–	16, 22, 30, 39, 47	–	X	–	–	–	–	–		–	–	–
B-224	Property	–	–	–	–	–	–	–	6, 11, 16, 21.5, 26, 31, 36, 60.5	–	X	–	–	–	–	–		–	–	–
B-225	Property	–	–	–	–	–	–	–	5, 11, 16, 21, 26, 31, 36	–	X	–	–	–	–	–		–	–	–
B-226	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 31.5, 40	–	X	–	–	–	–	–		–	–	–
B-227	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 31, 36	–	X	–	–	–	–	–		–	–	–
B-228	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 31, 36	–	X	–	–	–	–	–		–	–	–
B-229	Property	–	–	–	–	–	–	–	6, 11, 16, 25, 31, 36, 41, 45	–	X	–	–	–	–	–		–	–	–
B-230	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 31, 35, 55	–	X	–	–	–	–	–		–	–	–
B-231	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 30, 36	–	X	–	–	–	–	–		–	–	–
B-232	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 31, 36	–	X	–	–	–	–	–		–	–	–
B-233	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 31, 36	–	X	–	–	–	–	–		–	–	–
B-234	Property	–	–	–	–	–	–	–	11, 30	–	X	–	–	–	–	–		–	–	–
B-234A	Property	–	–	–	–	–	–	–	35, 40, 42, 45	–	X	–	–	–	–	–		–	–	–
B-235	Property	–	–	–	–	–	–	–	15, 35, 40, 42.5, 45	–	X	–	–	–	–	–		–	–	–
B-236	Property	–	–	–	–	–	–	–	20, 35, 40, 42.5, 45	–	X	–	–	–	–	–		–	–	–
B-237	Property	–	–	–	–	–	–	–	5, 35, 40, 42, 45	–	X	–	–	–	–	–		–	–	–
B-238	Property	–	–	–	–	–	–	–	6, 11, 16, 21, 26, 31, 36	–	X	–	–	–	–	–		–	–	–

Notes:
1. Property = 700 Dexter Avenue North
2. Periodic monitoring conducted with an electronic water level probe and continuous monitoring conducted with a pressure transducer and datalogger
3. GRO = gasoline-range organics using NWTPH-Gx
4. VOCs = volatile organic compounds using EPA Method 8260C
5. MNAs = monitored natural attenuation parameters: Anions: Nitrate, Sulfate, Chloride using EPA 300.0; total iron and manganese using EPA 6020/200.8; total organic carbon using SM5310B; alkalinity using SM2320B; ferrous iron using Hach kit 8146; dissolved methane, dissolved ethane, and dissolved ethene using RSK-175
6. Field parameters include pH, temperature, specific conductance, dissolved oxygen, and oxidation/reduction potential
7. Grain size = full grain size distribution using ASTM D422/D4464
8. Bulk density = dry bulk density using ASTM D2937
9. foc = fraction organic carbon using the Walkley-Black method
10. Vertical K = vertical hydraulic conductivity using ASTM Method D5084

Table 6

Summary of 2018 and 2019 Monitoring and Investigation
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well or Boring	Area Location	Groundwater Sampling								Soil Sample Chemical Analysis			Soil Sample Physical Analysis				
		2018			2019	Laboratory Analyses							Sample Depth	Grain	Bulk		Vertical
		Mar-May	Oct	Dec	Jan/Feb	GRO	VOCs	MNA	Field	Sample Depth (ft bgs)	GRO	VOCs	(ft bgs)	Size	Density	f_{oc}	K
Shallow Zone Wells																	
F5	Property	–	–	–	–	X	X	–	X	–	–	–	–	–	–	–	–
F9	Property	–	–	–	–	X	X	–	X	–	–	–	–	–	–	–	–
F13	Property	X	–	–	–	X	X	X	X	–	–	–	–	–	–	–	–
G12	Property	–	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
J5	Property	X	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–
J15	Property	X	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–
K8	Property	X	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–
M15	Property	X	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–
MW121	8th Ave N ROW	X	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–
MW125	Valley Street ROW	X	–	–	X	X	X	–	X	–	–	–	–	–	–	–	–
MW214	Valley Street ROW	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
MW-8	800 Roy St Parcel	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
MW-9	8th Ave N ROW	X	–	–	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-154	Roy St ROW, near MW106	X	–	–	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-155	Roy St ROW, near MW105	X	–	–	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-159	8th Ave N ROW, near SV02	X	–	–	X	X	X	–	X	20, 30	–	X	25	X	–	–	–
R-MW2	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
R-MW3	Property	X	–	–	–	X	X	–	X	–	–	–	–	–	–	–	–
R-MW5	Dexter Ave N ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
R-MW6	Property	X	–	–	X	X	X	X	X	–	–	–	–	–	–	–	–
SCL-MW101	Alley Between 8th & 9th Ave	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
SCL-MW105	Alley Between 8th & 9th Ave	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
SCS-2	Seattle City Light Parking Lot	X	–	–	–	X	X	–	X	–	–	–	–	–	–	–	–
SMW-3	Valley Street ROW	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
Intermediate A Zone Wells																	
BB-8	Roy Street ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW107	8th Ave N ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW108	Alley Between 8th & 9th Ave	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW109	Alley Between 8th & 9th Ave	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW110	Alley Between 8th & 9th Ave	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW115	9th Ave N ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW116	9th Ave N ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW119	South Adjoining Property	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW120	8th Ave N ROW	X	–	–	X	–	X	–	X	–	–	–	–	–	–	–	–
MW131	South part of the Property	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–
MW-142	8th Ave N ROW, near MW121	X	–	–	X	X	X	X	X	5	–	X	–	–	–	–	–
MW-144	8th Ave N ROW, SE of MW107	X	–	–	X	X	X	X	X	–	–	–	50	–	X	–	X
MW-146	Roy Street ROW, near MW106	X	–	–	X	X	X	X	X	–	–	–	–	–	–	–	–
MW-149	Northeast part of the Property	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–
MW-151	West part of the Property	X	X	X	X	X	X	X	X	–	–	–	–	–	–	–	–
MW-156	8th Ave N, near MW-9	X	–	–	X	X	X	X	X	–	–	–	–	–	–	–	–

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		2018			2019	Laboratory Analyses							Sample Depth	Grain	Bulk		Vertical
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Intermediate B Zone Wells																	
W-MW-01	8th Ave N ROW	X	X	X	X	–	X	X	X	–	–	–	–	–	–	–	–
W-MW-02	8th Ave N ROW	X	X	X	X	–	X	X	X	–	–	–	–	–	–	–	–
MW111	Alley Between 8th & 9th Ave	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW112	Dexter Ave N ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW126	Alley Between 8th & 9th Ave	X	–	–	X	–	X	–	X	–	–	–	–	–	–	–	–
MW130	West part of the Property	X	–	X	X	X	X	X	X	–	–	–	–	–	–	–	–
MW-132	Center of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-134	Northeast part of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-135	North-central part of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-136	Southwest corner of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-139	South-central part of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-143	8th Ave N ROW, near MW121	X	–	–	X	X	X	–	X	10, 20, 30, 40, 50, 60, 70, 80	–	X	45	–	X	–	–
MW-145	8th Ave N ROW, SE of MW107	X	–	–	X	X	X	–	X	10, 20, 30, 40, 50, 60, 70, 80	–	X	80	X	–	–	–
MW-147	Roy Street ROW, near MW106	X	–	–	X	X	X	–	X	10, 20, 30, 40, 50, 60, 70, 80	–	X	81	X	–	X	–
MW-148	Roy Street ROW, near BB-8	X	–	–	X	X	X	–	X	11, 20, 30, 40, 50, 60, 70, 80	–	X	60	X	–	–	–
MW-150	Northeast part of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-152	West part of the Property	X	X	X	X	X	X	–	X	5, 15, 25, 35, 45, 55, 60	–	X	–	–	–	–	–
MW-157	8th Ave N, near MW-9	X	–	–	X	X	X	–	X	–	–	–	–	–	–	–	–
Deep Zone Wells																	
MW102	Valley Street ROW	X	–	–	X	–	X	–	X	–	–	–	–	–	–	–	–
MW103	Alley Between 8th & 9th Ave	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW104	8th Ave N ROW	X	X	X	X	–	X	X	X	–	–	–	–	–	–	–	–
MW105	Roy Street ROW	X	–	–	X	–	X	–	X	–	–	–	–	–	–	–	–
MW113	9th Ave N ROW	X	–	–	X	–	X	X	X	–	–	–	–	–	–	–	–
MW122	Alley East of 800 Roy St	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
MW123	Westalke Ave N ROW	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
MW124	Valley Street ROW	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
MW128	Westlake Ave N ROW	X	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–
MW-133	West part of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-137	South-central part of the Property	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-138	Dexter Ave N ROW	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-140	Roy Street ROW	X	–	–	–	X	X	–	X	–	–	–	–	–	–	–	–
MW-141	Roy Street ROW	X	X	X	X	X	X	–	X	–	–	–	–	–	–	–	–
MW-153	Roy St ROW W of MW106	X	–	–	X	X	X	X	X	10, 20, 30, 40, 50, 61, 70, 80, 90, 110, 130	–	X	80, 90-100	X	–	–	–
MW-158A	8th Ave N, near MW-9	X	–	–	X	X	X	X	X	20, 30, 40, 50, 60, 70, 80, 90, 100	X	X	100	X	–	–	–
MW-160	8th Ave N, N of MW104	X	–	–	X	X	X	X	X	11, 21, 31, 40, 50, 55, 60, 70, 80, 90, 100, 110, 125, 127.5	–	X	100, 127.5	X	–	–	–
MW-161	8th Ave N, S of MW107	X	–	–	X	X	X	X	X	11, 21, 31, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130	–	X	100, 140	X	–	X	–
MW-162	Northeast part of the Property	–	–	–	X	X	–	–	X	48, 50, 67, 70, 72, 80, 85, 90, 95, 100, 105, 110	–	X	–	–	–	–	–
MW-163	Center of the Property	–	–	–	X	X	–	–	X	47, 50, 55, 60, 80, 85, 90, 95, 100, 105, 110	–	X	–	–	–	–	–
MW-164	Southwest part of the Property	–	–	–	X	X	–	–	X	80, 87, 90, 95, 100, 105, 110	–	X	–	–	–	–	–
Treatment Zone A Injection Wells																	
IW-4A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-7A	Property	X	–	–	–	–	X	–	X	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	X	X	–	–	–	–	–

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IW-9A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-18A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-22A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-37A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-41A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-42A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-45A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-46A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-48A	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-50A	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 42, 45, 50, 55, 60	–	X	–	–	–	–	–
IW-51A	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 42, 45, 50, 55, 60	–	X	–	–	–	–	–
IW-54A	Property	–	–	–	–	–	–	–	–	8, 49	–	X	–	–	–	–	–
IW-58A	Property	–	–	–	–	–	–	–	–	38	–	X	–	–	–	–	–
Treatment Zone B Injection Wells																	
IW-3B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-6B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-8B	Property	X	–	–	–	–	X	–	X	5, 10, 15, 20, 25, 30, 40, 45, 50, 55, 60, 64	–	X	–	–	–	–	–
IW-17B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-19B	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 63	–	X	–	–	–	–	–
IW-21B	Property	X	–	–	–	–	X	–	X	5, 10, 20, 30, 40, 50, 60, 67	–	X	–	–	–	–	–
IW-22B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-24B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-27B	Property	–	–	–	–	–	–	–	–	5, 15, 25, 35	–	X	–	–	–	–	–
IW-28B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-33B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-37B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-39B	Property	–	–	–	–	–	–	–	–	5, 15, 25, 35, 45, 55	–	X	–	–	–	–	–
IW-45B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-46B	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 42, 45, 50, 55, 60, 65, 70	–	X	–	–	–	–	–
IW-47B	Property	X	–	–	–	–	X	–	X	5, 10, 15, 20, 25, 30, 35, 40, 42, 45, 50, 55, 60, 65, 70, 75	–	X	–	–	–	–	–
IW-48B	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 42, 45, 50, 55, 60, 65, 70, 75	–	X	–	–	–	–	–
IW-49B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-51B	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-53B	Property	–	–	–	–	–	–	–	–	30	–	X	–	–	–	–	–
IW-54B	Property	–	–	–	–	–	–	–	–	8, 13, 21, 33	–	X	–	–	–	–	–
IW-55B	Property	–	–	–	–	–	–	–	–	39, 43, 61	–	X	–	–	–	–	–
Treatment Zone C Injection Wells																	
IW-1C	Property	X	–	–	–	–	X	–	X	5, 15, 25, 35, 45, 55, 65, 75	–	X	–	–	–	–	–
IW-2C	Property	–	–	–	–	–	–	–	–	5, 15, 25, 35, 45, 55, 65, 75	–	X	–	–	–	–	–
IW-3C	Property	–	–	–	–	–	–	–	–	5, 15, 25, 35, 45, 55, 65, 75	–	X	–	–	–	–	–
IW-4C	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-8C	Property	X	–	–	–	–	X	–	X	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75	–	X	–	–	–	–	–
IW-9C	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-13C	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–

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IW-15C	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-19C	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-20C	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-22C	Property	–	–	–	–	–	–	–	–	62, 78	–	X	–	–	–	–	–
IW-23C	Property	–	–	–	–	–	–	–	–	42	–	X	–	–	–	–	–
IW-24C	Property	–	–	–	–	–	–	–	–	48, 55, 66, 75, 80	–	X	–	–	–	–	–
IW-27C	Property	–	–	–	–	–	–	–	–	45	–	X	–	–	–	–	–
IW-28C	Property	–	–	–	–	–	–	–	–	92	–	X	–	–	–	–	–
Treatment Zone D Injection Wells																	
IW-1D	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-3D	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-4D	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-6D	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-8D	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-9D	Property	X	–	–	–	–	X	–	X	–	–	–	–	–	–	–	–
IW-11D	Property	X	–	–	–	–	X	–	X	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95	–	X	–	–	–	–	–
IW-12D	Property	–	–	–	–	–	–	–	–	42, 50, 60, 85, 95	–	X	–	–	–	–	–
IW-13D	Property	–	–	–	–	–	–	–	–	80, 85, 95	–	X	–	–	–	–	–
IW-14D	Property	–	–	–	–	–	–	–	–	45, 55, 65, 75, 86, 95	–	X	–	–	–	–	–
IW-15D	Property	–	–	–	–	–	–	–	–	54	–	X	–	–	–	–	–
IW-16D	Property	–	–	–	–	–	–	–	–	85, 90, 95	–	X	–	–	–	–	–
Temporary Borings																	
B-239	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-240	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-241	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-242	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-243	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-244	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-245	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-246	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-247	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80	–	X	–	–	–	–	–
B-248	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80. 85, 90, 95, 100, 105, 110, 115	–	X	–	–	–	–	–
B-249	Property	–	–	–	–	–	–	–	–	5, 8, 15, 17, 20	–	X	–	–	–	–	–
B-250	Property	–	–	–	–	–	–	–	–	2.5, 8, 10, 13, 20, 24, 30	–	X	–	–	–	–	–
B-251	Property	–	–	–	–	–	–	–	–	5, 8, 10, 15, 20, 25	–	X	–	–	–	–	–
B-252	Property	–	–	–	–	–	–	–	–	2.5, 8, 10, 15, 19, 25, 29	–	X	–	–	–	–	–
B-253A	Property	–	–	–	–	–	–	–	–	5, 8, 10, 15, 20	–	X	–	–	–	–	–
B-254	Property	–	–	–	–	–	–	–	–	5, 10, 13.5, 20, 25	–	X	–	–	–	–	–
B-254A	Property	–	–	–	–	–	–	–	–	27, 30, 35	–	X	–	–	–	–	–
B-255	Property	–	–	–	–	–	–	–	–	3.5, 8, 15	–	X	–	–	–	–	–
B-255A	Property	–	–	–	–	–	–	–	–	21	–	X	–	–	–	–	–
B-256	Property	–	–	–	–	–	–	–	–	2.5, 5, 10, 15, 18	–	X	–	–	–	–	–
B-257	Property	–	–	–	–	–	–	–	–	5, 10, 15, 20	–	X	–	–	–	–	–
B-258	Property	–	–	–	–	–	–	–	–	3, 8, 10, 15, 20	–	X	–	–	–	–	–

Table 6

Summary of 2018 and 2019 Monitoring and Investigation
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well or Boring	Area Location	Groundwater Sampling								Soil Sample Chemical Analysis			Soil Sample Physical Analysis				
		2018			2019	Laboratory Analyses							Sample Depth (ft bgs)	Grain Size	Bulk Density	f_{oc}	Vertical K
		Mar-May	Oct	Dec	Jan/Feb	GRO	VOCs	MNA	Field	Sample Depth (ft bgs)	GRO	VOCs					
B-259	Property	–	–	–	–	–	–	–	–	2.5, 5, 10, 15, 20	–	X	–	–	–	–	–
B-260	Property	–	–	–	–	–	–	–	–	5, 8, 10, 15, 20	–	X	–	–	–	–	–
B-261	Property	–	–	–	–	–	–	–	–	3, 5, 8, 10, 15, 20	–	X	–	–	–	–	–
B-262	Property	–	–	–	–	–	–	–	–	5, 8, 10, 15, 20	–	X	–	–	–	–	–
B-263	Property	–	–	–	–	–	–	–	–	3, 5, 8, 10, 15, 18	–	X	–	–	–	–	–
B-264	Property	–	–	–	–	–	–	–	–	3, 5, 8, 10, 15, 16	–	X	–	–	–	–	–
B-265	Property	–	–	–	–	–	–	–	–	3, 5, 8, 10, 18	–	X	–	–	–	–	–
B-266	Property	–	–	–	–	–	–	–	–	5, 8, 10, 15, 20	–	X	–	–	–	–	–
B-267	Property	–	–	–	–	–	–	–	–	2.5, 5, 8, 10, 15, 20	–	X	–	–	–	–	–

Notes:
1. Property = 700 Dexter Avenue North
2. GRO = gasoline-range organics using NWTPH-Gx
3. VOCs = volatile organic compounds using EPA Method 8260C
4. MNAs = monitored natural attenuation parameters: nitrate, sulfate, chloride using EPA 300.0; total iron and manganese using EPA 6020/200.8; total organic carbon using SM5310B; alkalinity using SM2320B; ferrous iron using Hach kit 8146; dissolved methane, ethane, and ethene using RSK-175
5. Field parameters include pH, temperature, specific conductance, dissolved oxygen, and oxidation/reduction potential
6. Grain size = full grain size distribution using ASTM D422/D4464
7. Bulk density = dry bulk density using ASTM D2937
8. f_{oc} = fraction organic carbon using the Walkley-Black method
9. Vertical K = vertical hydraulic conductivity using ASTM Method D5084

Table 7

Pressure Transducer Data
March 13, 2018, to March 13, 2019
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well	Groundwater Elevation (feet)				
	Maximum	Minimum	Mean	Median	Range
Shallow Zone					
R-MW3	34.92	25.56	29.69	28.79	9.36
Intermediate A Zone					
MW116	19.02	16.68	17.79	17.77	2.34
MW119	19.21	12.56	15.41	14.26	6.65
Deep Zone					
MW102	18.77	15.20	16.73	16.70	3.57
MW105	19.02	17.13	17.91	17.87	1.89
MW113	18.75	16.54	17.65	17.63	2.21
MW122	18.35	16.42	17.35	17.37	1.94

Notes:

1. Elevations relative to the North American Vertical Datum of 1988
2. Deep zone well FMW-129 data not summarized since the transducer stopped collecting data on June 27, 2017
3. Intermediate B zone well MW130 data not summarized since the transducer was removed from the well on September 14, 2018, due to interim action activities on theProperty
4. Tranducers did not collect data between May 7 and July 9, 2018

Table 8

Summary of Soil Physical Properties
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Location	Sample Depth (feet)	Unit	Sample USCS	Component Percentage			Horizontal Hydraulic Conductivity (K) Calculated Based on Grain Size (cm/sec)						Lab K (cm/sec)	TOC (mg/kg)	f_{oc} (g/g)	Total Porosity	Dry Bulk Density (pcf)	Moisture Content (%)
							Kozeny-Carman Method			Hazen Method (modified)								
				Gravel	Sand	Silt/ Clay	Max	Median	Min	d_{10} (cm)	K	Comments						
B-201	30	Int. A	SM	5.5	72.2	22.3	–	–	–	–	–	–	–	–	–	–	–	–
B-202	10	Shallow	SM	15.2	64.4	20.4	–	–	–	–	–	–	–	–	–	–	–	–
B-202	45	Int. A	SM	18.1	63.0	18.9	–	–	–	–	–	–	–	–	–	–	–	–
B-203	30	Int. A	SP	0.9	89.1	10.0	–	–	–	–	–	–	–	–	–	–	–	–
B-203	75	Int. B	ML	4.2	44.2	51.6	–	–	–	–	–	–	–	–	–	–	–	–
B-204	40	Int. A	SM	11.6	46.1	42.3	–	–	–	–	–	–	–	–	–	–	–	–
B-205	63	Int. B	SM	1.3	60.29	38.5	2.6E-03	1.1E-03	3.7E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-205	79	Int. B	ML	–	–	–	–	–	–	–	–	–	–	1,450	1.45E-03	–	–	–
B-206	47	Int. A	SM	6.7	58.3	35.0	3.3E-03	1.4E-03	4.7E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-206	48	Int. A	SM	3.0	77.0	19.9	8.4E-04	3.6E-04	1.2E-04	1.2E-03	1.4E-04	COC mistakenly listed depth as 50 ft	–	–	–	–	–	–
B-206	50 - 51	Int. A	SM	–	–	–	–	–	–	–	–	–	1.54E-06	–	–	0.33	114.8	10.2
B-207	50	Int. A	SM	13.3	54.8	31.9	3.7E-03	1.6E-03	5.3E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-207	52	Int. B	ML	–	–	–	–	–	–	–	–	–	–	1,500	1.50E-03	–	–	–
B-208	56 - 57	Int. B	SM	4.8	62.2	33.0	3.5E-03	1.5E-03	4.9E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-209	57	Int. B	SM	4.1	55.8	40.2	2.4E-03	1.0E-03	3.5E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-209	73	Int. B	SM	–	–	–	–	–	–	–	–	–	–	1,900	1.90E-03	–	–	–
B-210	59 - 60	Int. B	SM	6.9	48.8	44.2	1.9E-03	8.0E-04	2.7E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-211	83	Deep	SP	5.4	90.3	4.3	7.6E-02	3.3E-02	1.1E-02	2.4E-02	5.5E-02	–	–	–	–	–	–	–
B-212	54	Int. B	ML	0.0	1.6	98.4	8.6E-06	3.7E-06	1.2E-06	1.0E-04	1.0E-06	–	–	–	–	–	–	–
B-213	99	Deep	SM	3.1	81.9	15.1	1.1E-02	4.6E-03	1.5E-03	4.9E-03	2.4E-03	–	–	–	–	–	–	–
B-213	125	Deep	SM	–	–	–	–	–	–	–	–	–	–	390	3.90E-04	–	–	–
B-216	76	Int. B	SM	2.9	65.0	32.1	3.7E-03	1.6E-03	5.2E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
B-217	97 - 99	Deep	SP	32.1	61.0	6.9	4.4E-02	1.9E-02	6.3E-03	1.4E-02	1.8E-02	–	–	–	–	–	–	–
B-219	73	Int. B	SM	4.1	72.6	23.3	6.0E-03	2.6E-03	8.5E-04	3.7E-03	1.4E-03	–	–	–	–	–	–	–
MW-132	53	Int. A	SM	4.4	69.8	25.8	4.4E-03	1.9E-03	6.3E-04	< 3.0E-03	< 1.4E-03	–	–	–	–	–	–	–
MW-132	82	Int. B	ML	–	–	–	–	–	–	–	–	–	–	2,100	2.10E-03	–	–	–
MW-133	106	Deep	GP	52.3	41.1	6.6	5.7E-02	2.4E-02	8.1E-03	1.4E-02	1.9E-02	–	–	–	–	–	–	–
MW-135	50	Int. A	SM	6.0	75.0	19.0	7.9E-03	3.4E-03	1.1E-03	4.0E-03	1.6E-03	COC mistakenly listed depth as 60 ft	–			–		
MW-135	60 - 60.5	Int. B	SM	–	–	–	–	–	–	–	–	–	9.32E-07	–	–	–	127.4	10.9
MW-136	77	Int. B	CL	0.0	0.9	99.1	1.7E-06	7.1E-07	2.3E-07	5.0E-05	2.5E-07	–	–	–	–	–	–	–
MW-137	50	Int. A	ML	0.0	0.1	99.9	3.7E-06	1.6E-06	5.3E-07	7.5E-05	5.6E-07	–	–	–	–	–	–	–
MW-137	90	Int. B	ML	–	–	–	–	–	–	–	–	–	–	2,450	2.45E-03	–	–	–
MW-137	115	Deep	SP	11.2	81.6	7.3	3.0E-02	1.3E-02	4.2E-03	1.1E-02	1.3E-02	–	–	–	–	–	–	–
MW-138	65	Int. A	SM	9.6	73.5	16.9	1.2E-02	5.2E-03	1.7E-03	5.3E-03	2.8E-03	–	–	–	–	–	–	–
MW-138	115	Deep	SP	19.7	73.1	7.2	3.6E-02	1.5E-02	5.1E-03	1.2E-02	1.4E-02	–	–	–	–	–	–	–
MW-139	80	Int. B	SM	0.3	82.7	17.0	8.9E-03	3.8E-03	1.3E-03	4.3E-03	1.8E-03	–	–	–	–	–	–	–
MW-140	80 - 80.5	Int. B	SM	6.7	54.5	38.7	2.4E-03	1.0E-03	3.4E-04	< 3.0E-03	< 1.4E-03	–	8.58E-07	–	–	–	112.4	12.6
MW-140	100	Deep	SP	18.5	78.7	2.9	9.4E-02	4.0E-02	1.3E-02	2.2E-02	4.9E-02	COC mistakenly listed depth as 90 ft	–	–	–	–	–	–
MW-143	45	Int. A	SM	–	–	–	–	–	–	–	–	–	–	–	–	–	160.4	10.3
MW-144	50	Int. A	ML	–	–	–	–	–	–	–	–	–	9.18E-06	–	–	–	150.5	24.0
MW-145	80	Int. B	ML	4.5	36.1	59.4	4.9E-06	2.1E-06	6.9E-07	7.2E-05	5.2E-07	–	–	–	–	–	–	–
MW-147	81	Int. B	GP	51.7	36.1	12.2	4.7E-05	2.0E-05	6.6E-06	5.0E-04	2.5E-05	–	–	690	6.9E-04	–	–	–
MW-148	60	Int. B	SP	0.0	91.6	8.4	1.5E-04	6.6E-05	2.2E-05	1.5E-02	2.3E-02	–	–	–	–	–	–	–
MW-153	80	Int. B	SM	4.4	47.5	48.1	5.3E-05	2.3E-05	7.5E-06	4.5E-04	2.0E-05	–	–	–	–	–	–	–
MW-153	90 to 100	Deep	SP	0.1	92.6	7.4	3.4E-04	1.5E-04	4.8E-05	1.7E-02	2.9E-02	–	–	–	–	–	–	–

Table 8

Summary of Soil Physical Properties
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Location	Sample Depth (feet)	Unit	Sample USCS	Component Percentage			Horizontal Hydraulic Conductivity (K) Calculated Based on Grain Size (cm/sec)						Lab K (cm/sec)	TOC (mg/kg)	f_{oc} (g/g)	Total Porosity	Dry Bulk Density (pcf)	Moisture Content (%)
							Kozeny-Carman Method			Hazen Method (modified)								
				Gravel	Sand	Silt/ Clay	Max	Median	Min	d_{10} (cm)	K	Comments						
MW-158A	100	Deep	SP	26.6	64.4	9.0	5.2E-04	2.2E-04	7.3E-05	3.1E-02	9.5E-02	–	–	–	–	–	–	–
MW-159	25	Int. A	ML	0.0	39.3	60.7	2.6E-05	1.1E-05	3.7E-06	1.5E-04	2.3E-06	–	–	–	–	–	–	–
MW-160	100	Deep	SM	0.3	81.5	18.2	1.8E-04	7.8E-05	2.6E-05	1.40E-03	2.0E-04	–	–	–	–	–	–	–
MW-160	127.5	Deep	SM	18.9	46.2	34.9	4.0E-05	1.7E-05	5.7E-06	2.00E-04	4.0E-06	–	–	–	–	–	–	–
MW-161	100	Deep	SP	2.9	90.1	6.9	4.1E-04	1.8E-04	5.8E-05	1.82E-02	3.3E-02	–	–	–	–	–	–	–
MW-161	140	Basal	SM	15.4	51.9	32.7	5.4E-05	2.3E-05	7.6E-06	3.00E-04	9.0E-06	–	–	300	3.0E-04	–	–	–

Notes:
1. Depths in feet below ground surface.
2. cm/sec = centimeters per second.
3. – = not determined.
3. Int. A = Intermediate A water-bearing zone, Int. B = water-bearing zone, Deep = deep water-bearing zone, Basal = aquitard at the base of the deep water-bearing zone.
4. UCSC = Unified Soil Classification System symbol; GP = poorly graded gravel, SP = poorly graded sand, SM = silty sand, ML = sandy silt, silt with sand, or silt.
5. Grain size determined using ASTM D422/D4464M (sieve/laser or hydrometer).
6. Lab did not run hydrometer below No. 400 (except on samples B-212 at 54 ft, MW-136 at 77 ft, MW-137 at 50 ft, and B-206 at 48 ft, MW-145 at 80 ft, MW-147 at 81 ft, MW148 at 60 ft, MW-153 at 80 and 90 to 100 ft, MW-158A at 100 ft, MW-159 at 25 ft, MW-160 at 100 and 127.5 ft, and MW-161 at 100 and 140 ft). Remaining pan weights distributed evenly across 25, 15.6, and 5 microns for hydraulic conductivity based on grain size analysis calculations.
7. Kozeny-Carman calculations provided in Appendix F. The modified Hazen method estimates hydraulic conductivity by multiplying the square of d_{10} (10 percent passing diameter) by 100.
8. Laboratory hydraulic conductivity (K) determined using ASTM D-5084.
9. f_{oc} determined using the Walkley-Black method.
10. Dry bulk density and moisture content determined using ASTM D2937.

Table 9

Preliminary Screening Levels
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

		Soil Screening Levels								Groundwater Screening Levels						Vapor Intrusion Screening Levels	
				Unsaturated Soil				Saturated Soil									
		Historical Lab PQLs	Current Lab PQLs	Protection of Residential Groundwater		Protection of Surface Water		Screening Level		Historical Lab PQLs	Current Lab PQLs	Protection of Residential Groundwater		Protection of Surface Water		Groundwater	Sub-Slab Soil Vapor
Chemical Name	CAS #	(mg/kg)	(mg/kg)	Level (mg/kg)	Basis	Level (mg/kg)	Basis	(mg/kg)	Basis	(µg/L)	(µg/L)	Level (µg/L)	Basis	Level (µg/L)	Basis	(µg/L)	(µg/m³)
acetone	67-64-1	0.05	0.03	29	Leach	–	–	2.1	Leach	2 - 5	1.05	7,200	Method B	–	–	–	–
benzene	71-43-2	0.0008 - 0.05	0.001	0.027	Leach	0.050	Leach/PQL	0.030	Leach/PQL	0.35	0.5	5	MCL	0.5	CWA	2.4	11
n-butylbenzene	104-51-8	–	0.001	14.1	Leach	–	–	0.703	Leach	1	0.5	400	Method B	–	–	–	–
sec-butylbenzene	135-98-8	0.05	0.001	25.0	Leach	–	–	1.25	Leach	1	0.5	800	Method B	–	–	–	–
tert-butylbenzene	98-06-6	0.05	0.001	8,000	Method B	–	–	–	–	–	0.5	800	Method B	–	–	–	–
2-butanone (MEK)	78-93-3	0.5	0.01	19.7	Leach	–	–	0.983	Leach	10	2.5	4,800	Method B	–	–	1,700,000	76,000
carbon disulfide	75-15-0	–	0.001	5.0	Leach	–	–	0.27	Leach	–	0.5	800	Method B	–	–	400	11,000
chlorobenzene	108-90-7	0.001	0.003	0.86	Leach	0.86	Leach	0.051	Leach	1	0.5	100	MCL	100	CWA	286	762
chloroethane (ethyl chloride)	75-00-3	0.5	0.005	–	–	–	–	–	–	1	0.5	–	–	–	–	18,000	150,000
chloroform	67-66-3	0.05	0.005	0.074	Leach	0.093	Leach	0.005	Leach/PQL	1	0.5	80	MCL	100	CWA	1.2	3.6
chloromethane	74-87-3	0.5	0.0025	–	–	–	–	–	–	10	2.5	–	–	–	–	150	1,400
1,2-dichlorobenzene	95-50-1	0.001	0.005	7.0	Leach	8.2	Leach	0.40	Leach			600	MCL	700	CWA	2,570	3,050
1,4-dichlorobenzene	106-46-7	0.001	0.005	1.2	Leach	3.2	Leach	0.068	Leach			75	MCL	200	CWA	4.85	7.58
1,1-dichloroethane	75-34-3	0.05	0.001	0.041	Leach	–	–	0.0026	Leach	1	0.5	7.7	Method B	–	–	11.0	52
1,2-dichloroethane (EDC)	107-06-2	0.05	0.001	0.023	Leach	0.4265	Leach	0.0016	Leach	0.5	0.5	0.48	Method B	8.9	CWA	4.2	3.2
1,1-dichloroethene	75-35-4	0.05	0.001	0.046	Leach	4.60	Leach	0.050	Leach/PQL	1	0.5	7	MCL	700	CWA	130	3,000
cis-1,2-dichloroethene (cDCE)	156-59-2	0.0008 - 0.05	0.001	0.078	Leach	0.080	Leach	0.050	Leach/PQL	1	0.5	16	MCL/ECY	–	–	–	–
trans-1,2-dichloroethene (tDCE)	156-60-5	0.0007 - 0.05	0.001	0.52	Leach	0.54	Leach	0.050	Leach/PQL	1	0.5	100	MCL	200	CWA	–	–
1,2-dichloropropane	78-87-5	0.05	0.001	0.025	Leach	0.004	Leach	0.0017	Leach	1	0.5	5	MCL	0.71	ECY	10	23
di-isopropyl ether	108-20-3	–	0.001	–	–	–	–	–	–	–	0.5	–	–	–	–	–	–
ethylbenzene	100-41-4	0.0008 - 0.05	0.001	5.9	Leach	0.24	Leach	0.34	Leach	1	0.5	700	MCL	29	CWA	2,800	15,000
n-hexane	110-54-3	–	0.001	69	Leach	–	–	1.8	Leach	–	1.0	480	Method B	–	–	7.8	11,000
isopropylbenzene (cumene)	98-82-8	0.05	0.001	15.0	Leach	–	–	0.751	Leach	1	0.5	800	Method B	–	–	720	6,100
p-isopropyltoluene	99-87-6	0.05	0.001	–	–	–	–	–	–	1	0.5	–	–	–	–	–	–
4-methyl-2-pentanone (MIBK)	108-10-1	0.5	0.01	2.73	Leach	–	–	0.136	Leach	10	2.5	640	Method B	–	–	470,000	46,000
methyl tert-butyl ether (MTBE)	1634-04-4	0.05	0.001	0.10	Leach	–	–	0.0072	Leach	1	0.5	24	Method B	–	–	610	321
methylene chloride	75-09-2	0.05	0.001	0.021	Leach	0.042	Leach	0.0015	Leach	0.5	0.5	5	MCL	10	CWA	4,400	8,300
naphthalene	91-20-3	0.05	0.005	4.5	Leach	–	–	0.24	Leach	1	0.5	160	Method B	–	–	8.9	2.5
n-propylbenzene	103-65-1	0.05	0.001	16.8	Leach	–	–	0.84	Leach	1	0.5	800	Method B	–	–	–	–
styrene	100-42-5	0.001	0.01	2.2	Leach	–	–	0.12	Leach	1	0.5	100	MCL	–	–	8,100	15,200
tetrachloroethene (PCE)	127-18-4	0.0008 - 0.025	0.001	0.05	Leach	0.025	Leach/PQL	0.025	Leach/PQL	1	0.5	5	MCL	2.4	NTR	24	320
toluene	108-88-3	0.0008 - 0.05	0.005	4.5	Leach	0.324	Leach	0.27	Leach	1	1.0	1,000	MCL	72	CWA	15,000	76,000
tph, diesel- and oil-range organics	None	25 - 100	50	2,000	Method A	–	–	–	–	50 - 250	200	500	Method A	–	–	–	–
tph: gasoline range, benzene present	None	1 - 30	5	30	Method A	–	–	–	–	50 - 100	100	800	Method A	–	–	–	–
tph: gasoline range, no detectable benzene	None	1 - 30	5	100	Method A	–	–	–	–	50 - 100	100	1,000	Method A	–	–	–	–
1,1,1-trichloroethane (TCA)	71-55-6	0.05	0.001	1.5	Leach	150	Leach	0.084	Leach	1	0.5	200	MCL	20,000	CWA	5,500	76,000
trichloroethene (TCE)	79-01-6	0.0008 - 0.03	0.001	0.030	Leach/PQL	0.030	Leach/PQL	0.030	Leach/PQL	1	0.5	4	MCL/ECY	1	CWA/PQL	1.5	12
1,1,2-trichlorotrifluoroethane (CFC 113)	76-13-1	–	0.001	10,850	Leach	–	–	543	Leach	–	0.5	240,000	Method B	–	–	180	76,000
1,2,4-trimethylbenzene	95-63-6	0.05	0.001	–	–	–	–	–	–	1	0.5	80	Method B	–	–	240	910
1,2,3-trimethylbenzene	526-73-8	–	0.001	–	–	–	–	–	–	–	0.5	80	Method B	–	–	–	–
1,3,5-trimethylbenzene	108-67-8	0.05	0.001	1.33	Leach	–	–	0.0667	Leach	1	0.5	80	Method B	–	–	–	–
vinyl chloride (VC)	75-01-4	0.0007 - 0.05	0.001	0.050	Leach/PQL	0.050	Leach/PQL	0.050	Leach/PQL	0.2	0.5	2	MCL	0.2	CWA/PQL	0.35	9.4
xylene;m-	108-38-3	0.1	NA	13	Leach	–	–	0.77	Leach	2	NA	–	–	–	–	–	–

Table 9

Preliminary Screening Levels
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Chemical Name	CAS #	Soil Screening Levels: Unsaturated Soil: Protection of Residential Groundwater: Historical Lab PQLs (mg/kg)	Soil Screening Levels: Unsaturated Soil: Protection of Residential Groundwater: Current Lab PQLs (mg/kg)	Soil Screening Levels: Unsaturated Soil: Protection of Residential Groundwater: Level (mg/kg)	Soil Screening Levels: Unsaturated Soil: Protection of Residential Groundwater: Basis	Soil Screening Levels: Unsaturated Soil: Protection of Surface Water: Level (mg/kg)	Soil Screening Levels: Unsaturated Soil: Protection of Surface Water: Basis	Soil Screening Levels: Saturated Soil: Screening Level (mg/kg)	Soil Screening Levels: Saturated Soil: Basis	Groundwater Screening Levels: Protection of Residential Groundwater: Historical Lab PQLs (µg/L)	Groundwater Screening Levels: Protection of Residential Groundwater: Current Lab PQLs (µg/L)	Groundwater Screening Levels: Protection of Residential Groundwater: Level (µg/L)	Groundwater Screening Levels: Protection of Residential Groundwater: Basis	Groundwater Screening Levels: Protection of Surface Water: Level (µg/L)	Groundwater Screening Levels: Protection of Surface Water: Basis	Vapor Intrusion Screening Levels: Groundwater (µg/L)	Vapor Intrusion Screening Levels: Sub-Slab Soil Vapor (µg/m³)
xylene;o-	95-47-6	0.05	NA	14	Leach	–	–	0.84	Leach	1	NA	–	–	–	–	–	–
xylene;p-	106-42-3	0.1	NA	17	Leach	–	–	0.96	Leach	2	NA	–	–	–	–	–	–
xylenes	1330-20-7	0.0016 - 0.15	0.003	14	Leach	–	–	0.83	Leach	0.5 - 1	1.5	10,000	MCL	–	–	330	1,500

NOTES:

a. CAS # = Chemical Abstracts Service Registry Number.
b. Screening levels for the chlorinated VOCs either presented in or using the methods outlined in Ecology's cleanup level/screening level technical memoranda dated January 28, 2016, and December 12, 2017.
c. Method A cleanup levels (unrestricted land use) from the Model Toxics Control Act (WAC 173-340).
d. Leach = leaching to groundwater.
e. MCL = maximum contaminant level.
f. CWA = clean water act, for protection of human health through consumption of both water and organisms.
g. NTR = national toxics rule, for protection of human health through consumption of both water and organisms.
h. ECY = human health criterion for consumption of water and organisms (WAC-173-201A, August 1, 2016).
i. PQL = screening level adjusted upward to the practical quantitation limit.
j. Sub-slab soil gas screening levels from Ecology Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action (October, 2009; revised February 2016).
k. – = not available.
l. Preliminary screening levels highlighted in yellow.

Table 10

Soil Chemical Detection Statistics
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Chemical Name	CAS #	Screening Level (mg/kg)	On-Property				Off-Property				On and Off Property			
			n	FOD	Maximum Detection (mg/kg)	Minimum Detection (mg/kg)	n	FOD	Maximum Detection (mg/kg)	Minimum Detection (mg/kg)	n	FOD	Maximum Detection (mg/kg)	Minimum Detection (mg/kg)
GRO	None	30	106	57%	260	0.0353 U	133	31%	4,100	0.0376 U	239	42%	4,100	0.0353 U
DRO	None	2,000	4	25%	230 x	50 U	54	17%	610	5.90 U	58	17%	610	5.90 U
ORO	None	2,000	4	0%	–	250 U	45	16%	770	12 U	49	14%	770	12 U
Benzene	71-43-2	0.030	856	11%	0.304	0.000281 U	281	15%	10.0	0.000285 U	1,137	12%	10.0	0.000281 U
Toluene	108-88-3	0.273	856	17%	0.580	0.000325 U	281	14%	160	0.000454 U	1,137	16%	160	0.000325 U
Ethylbenzene	100-41-4	0.343	856	5%	4.74	0.000297 UJ	281	9%	54	0.000311 U	1,137	6%	54.0	0.000297 UJ
Total Xylenes	1330-20-7	0.831	856	4%	6.02	0.000400 J	281	10%	300	0.000730 U	1,137	5%	300	0.000400 J
PCE	127-18-4	0.025	992	85%	16,400	0.000290 U	368	26%	19	0.000289 U	1,360	69%	16,400	0.000289 U
TCE	79-01-6	0.030	991	71%	113	0.000293 U	368	19%	3.57	0.000290 U	1,359	56%	113	0.000290 U
cDCE	156-59-2	0.050	991	74%	329	0.000247 U	362	23%	3.00	0.000244 UJ	1,353	60%	329	0.000244 UJ
tDCE	156-60-5	0.050	992	28%	0.700	0.000275 U	360	4%	0.0221	0.000274 U	1,352	22%	0.700	0.000274 U
VC	75-01-4	0.050	991	42%	17.0	0.000306 UJ	366	9%	0.656	0.000302 U	1,357	33%	17.0	0.000302 U

Notes:

1. mg/kg = milligrams per kilogram
2. n = number of samples analyzed. Includes historical and current data.
3. FOD = frequency of detection
4. GRO = gasoline-range organics
5. DRO = diesel-range organics
6. ORO = oil-range organics
7. PCE = perchloroethylene (tetrachloroethene)
8. TCE = trichloroethene
9. cDCE = cis-1,2-dichloroethene
10. tDCE = trans-1,2-dichloroethene
110. VC = vinyl chloride
121. x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation
13. – = value not detected or not analyzed
14. U = not detected at or above the laboratory method detection limit (MDL)
15. J = the identification of the analyte is acceptable; the reported value is an estimate

Table 11

Groundwater Chemical Detection Statistics
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

			Monitoring Wells												Injection Wells													
			Shallow Zone				Intermediate A and B Zones				Deep Zone				Injection Zone A				Injection Zone B				Injection Zone C				Injection Zone D			
Chemical Name	CAS #	Screening Level (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)	n	FOD	Maximum Detection (µg/L)	Minimum Detection (µg/L)
GRO	None	800	98	49%	150,000	31.6 U	109	17%	11,700	28.9	37	27%	3,100 J+z	31.6 U	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
DRO	None	500	25	64%	26,000	34.0 U	20	0%	–	50 U	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ORO	None	500	25	32%	25,000	250 U	20	0%	–	100 U	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Benzene	71-43-2	0.5	144	45%	20,000	0.001 U	186	20%	14.1	0.0896 U	93	9%	28.3	0.0896 U	11	36%	0.306 J	0.0896 U	14	36%	0.838	0.0896 U	8	50%	0.285 J	0.0896 U	7	0%	–	0.0896 U
Toluene	108-88-3	72	144	41%	22,000	0.412 U	186	22%	17.6 E	0.1 J	93	19%	3.90	0.412 U	11	36%	2.07	0.412 U	14	50%	17.7	0.412 U	8	63%	2.77	0.412 U	7	71%	6.74	0.412 U
Ethylbenzene	100-41-4	29	144	24%	3,100	0.158 U	183	8%	28.6	0.158 U	93	0%	–	0.158 U	11	0%	–	0.158 U	14	14%	0.777 J+	0.158 U	8	13%	0.206 J	0.158 U	7	0%	–	0.158 U
Total Xylenes	1330-20-7	10,000	144	28%	15,000	0.316 U	186	7%	55.1	0.316 U	93	3%	0.396 J	0.316 U	11	18%	0.507 J	0.316 U	14	14%	4.55	0.316 U	8	25%	1.54	0.316 U	7	29%	0.409 J	0.316 U
PCE	127-18-4	1	150	62%	176,000	0.199 U	252	56%	220,000	0.199 U	126	36%	2,800	0.199 U	11	91%	16,500	0.199 U	14	93%	62,600	0.199 U	8	100%	27,400	1.12	7	100%	64100	2.86
TCE	79-01-6	1	150	53%	13,000	0.153 U	252	64%	11,000	0.153 U	126	42%	1,100	0.153 U	11	73%	7,640	0.153 U	14	100%	20,100	0.215 J	8	100%	1,860	0.192 J	7	100%	4,600	0.653
cDCE	156-59-2	16	146	68%	9,300	0.0933 U	252	79%	77,100 J+	0.0933 U	126	61%	7,280	0.0933 U	11	100%	18,800	1.16	14	100%	51,400	4.60	8	100%	26,800	12.7	7	100%	9,860	2.97
tDCE	156-60-5	100	144	35%	1,000	0.152 U	251	43%	242	0.152 U	126	19%	28.2	0.152 U	11	91%	14.5	0.152 U	14	86%	274	0.152 U	8	88%	107	0.152 U	7	71%	39.1	0.152 U
VC	75-01-4	0.2	150	56%	1,100	0.118 U	252	74%	9,600	0.118 U	126	53%	290 ve	0.118 U	11	100%	2,020	1.20	14	100%	9,680	0.403 J	8	100%	7,350	1.69	7	100%	631	1.27

Notes:

1. Int. = Intermediate
2. µg/L = micrograms per liter
3. n = number of samples analyzed; includes historical and current data
4. FOD = frequency of detection
5. GRO = gasoline-range organics
6. DRO = diesel-range organics
7. ORO = oil-range organics
8. PCE = perchloroethylene (tetrachloroethene)
9. TCE = trichloroethene
10. cDCE = cis-1,2-dichloroethene
11. tDCE = trans-1,2-dichloroethene
12. VC = vinyl chloride
13. U = not detected at or above the laboratory method detection limit (MDL)
14. E = Estimated value. The reported range exceeds the calibration range of the analysis.
15. – = value not detected or not analyzed
16. J = the identification of the analyte is acceptable; the reported value is an estimate
17. ve = estimated value due to the reported range exceeding the calibration range of the analysis
18. + = the identification of the analyte is acceptable; the reported value is an estimate, however the value may potentially be biased high

Table 12

Groundwater Analytical Data for Shallow Zone Wells
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	2.4		1		16		100		0.2	
On Property													
F5	29.0 to -1.0	Property	07/19/13	**120,000**		**1,100**		**700**		**5.20**		**4.2**	
			10/24/13	**21,000**		**1,200**		**1,000**		**1,000**		200	U
			03/28/17	0.199	U	**0.241**	**J**	**516**		**4.31**		**90.6**	
			06/22/17	0.199	U	**0.485**		**10.4**		**0.485**	**J**	**63.9**	
F9	28.5 to -1.5	Property	07/19/13	**140,000**		**3,400**		**1,100**		**8.6**		**78**	
			06/16/15	**3.7**		**1.8**		**680**		**12**		**74**	
			10/19/15	**15.0**		**6.6**		**840**		**13**		**75**	
			02/01/16	**2.9**		1	U	**1.3**		1	U	**20**	
			03/27/17	0.199	U	0.153	U	**0.158**	**J**	**0.539**		0.118	U
			06/22/17	0.199	U	0.153	U	**6.10**		**0.485**		**3.57**	
F13	28.4 to -1.6	Property	07/19/13	**2,900**		**280**		**370**		100	U	**49**	
			10/24/13	**7,300**		**3,100**		**490**		50	U	10	U
			11/18/13	**67,000**		**6,600**		**3,200**		**85**		**48**	
			12/12/13	**1,100**		**340**		**670**		10	U	**20**	
			03/07/14	**84**		**11**		**10**		1	U	**0.36**	
			06/16/15	**8.4**		1	U	**1.8**		1	U	**0.31**	
			10/19/15	1	U	**2.0**		**210**		**2.3**		**4.1**	
			02/02/16	**3.4**		1	U	1	U	1	U	**0.97**	
			03/27/17	0.199	U	0.153	U	**0.218**	**J**	0.152	U	**0.936**	
			06/22/17	0.199	U	0.153	U	**0.194**	**J**	0.152	U	**1.32**	
			04/05/18	**20.3**		**0.346**	**J**	**0.375**	**J**	0.152	U	**0.843**	
G12	28.4 to -1.6	Property	07/19/13	**64,000**		**3,100**		**9,200**		**88**		**130**	
			10/24/13	**1,700**		**150**		100	U	100	U	20	U
			11/18/13	**760**		**84**		**42**		10	U	2	U
			03/27/17	0.199	U	**0.233**	**J**	**95.9**		**1.97**		**28.4**	
			06/30/17	0.199	U	**0.323**	**J**	**115**		**2.94**		**31.5**	
G-MW2	31 to 21	Property	07/24/01	**176,000**		**237**	**g**	**129**	**g**	**1.02**		**0.457**	
			01/29/09	**59,000**	**f**	**210**		**373**		**1.33**		0.200	U
			06/02/11	**150,000**		1000	U	1000	U	1000	U	200	U
			09/06/12	**150,000**		**320**		**260**		**1.4**		0.2	U
		Decommissioned											
J5	29.8 to -0.2	Property	07/19/13	**46,000**		**660**		100	U	100	U	20	U
			10/24/13	**48,000**		**13,000**		**1,400**		100	U	20	U
			06/16/15	**1,100**		**340**		**250**		**51**		**1.0**	
			10/19/15	**1,400**		**470**		**890**		**51**		**1.3**	
			02/02/16	**1,500**		**110**		**280**		**14**		**0.31**	
			03/21/17	**285**		**78.5**		**253**		**1.73**		**29.6**	
			06/26/17	**36.1**		**37.1**		**366**		**1.94**		**77.7**	
			04/05/18	**267**		**70.5**		**222**		**1.00**		**17.6**	

Table 12

Groundwater Analytical Data for Shallow Zone Wells
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
J15	28.7 to -1.3	Property	07/19/13	**4,100**		**220**		**580**		**6.8**		**20**	
			10/24/13	**10,000**		**1,100**		**680**		100	U	20	U
			03/07/14	**2,200**		**170**		**120**		50	U	10	U
		Property	06/16/15	**9.0**		**12**		**310**		**8.8**		**3.1**	
			10/19/15	**3.6**		1	U	**110**		**3.0**		**1.7**	
			02/02/16	**2.4**		1	U	**35**		1	U	**0.39**	
			03/27/17	0.199	U	0.153	U	**43.3**		**1.18**		**6.99**	
			06/26/17	0.199	U	0.153	U	**39.8**		**1.06**		**6.30**	
(duplicate)			06/26/17	0.199	U	0.153	U	**39.3**		**1.03**		**6.73**	
			04/05/18	**12.8**		**0.358**	**J**	**26.3**		**0.709**		**6.07**	
K8	29.9 to -0.1	Property	07/19/13	**8,700**		**330**		**1,400**		**5.6**		**6.3**	
			06/17/15	**63**		**16**		**500**		**67**		2	U
			10/19/15	**360**		**82**		**43**		**3.2**		**0.44**	
			02/01/16	**250**		**44**		**82**		**1.8**		**0.31**	
			03/21/17	**82.5**		**22.0**		**123**		**0.680**		**0.461**	**J**
			06/26/17	**67.9**		**28.7**		**140**		**0.750**		**0.456**	**J**
			04/05/18	**229**		**26.3**		**104**		**0.750**		**1.45**	
M15	29.5 to -0.5	Property	07/19/13	**3,200**		**110**		**180**		**1.7**		**0.22**	
			10/24/13	**56,000**		**1,100**		**770**		50	U	10	U
			03/07/14	**2,100**		**190**		**290**		**2.9**		**2.60**	
			06/16/15	**58**		**44**		**76**		**2.7**		**1.1**	
			10/19/15	**48**		**29**		**110**		**2.3**		**0.74**	
			02/02/16	**11**		**10**		**84**		**1.8**		**0.39**	
			03/27/17	0.199	U	**0.733**		**32.7**		**0.561**		**13.2**	
(duplicate)			03/27/17	0.199	U	**0.670**		**31.7**		**0.513**		**12.0**	
			06/26/17	**0.233**	**J**	**1.80**		**25.8**		**0.523**		**15.0**	
			04/05/18	0.199	U	**0.563**		**8.89**		**0.300**	J	**11.1**	
N7	41.8 to 11.8	Property	07/19/13	**640**		**50**		**18**		1	U	0.2	U
			10/19/15	**2,900**		**99**		**9.9**		1	U	0.2	U
			02/02/16	**230**		**79**		**1,700**		**2.9**		**0.92**	
			03/30/17	**280**		**50.4**		**125**		**0.396**	**J**	**0.310**	**J**
			06/27/17	**205**		**85.1**		**153**		**0.955**		**0.386**	**J**
R-MW1	33.78 to 23.78	Property	10/24/92	5	U	5	U	–		5	U	**100**	
			10/24/92	**4.2**		**0.82**		**12.0**	**c**	–		**170**	
			10/24/92	**2.3**		2	U	**14**		NA		**140**	
			01/29/09	**17.1**		**4.26**		**1.60**		0.200	U	**0.630**	
			06/02/11	**7.9**		**2.7**		**1.9**		1	U	**0.68**	
			09/05/12	**16**		**3.6**		**2.1**		1	U	**2.20**	
			Decommissioned										

Table 12

Groundwater Analytical Data for Shallow Zone Wells
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
R-MW2	36.74 to 26.74	Property	10/24/92	5	U	5	U	–		5	U	5	U
			01/29/09	**5.05**		0.200	U	0.200	U	0.200	U	0.200	U
			06/02/11	1	U	1	U	1	U	1	U	0.2	U
			09/04/12	1	U	1	U	1	U	1	U	0.2	U
			03/21/17	0.199	U	0.153	U	**0.341**	**J**	0.152	U	**0.522**	
			06/15/17	0.199	U	0.153	U	**0.682**		0.152	U	**0.609**	
			04/02/18	**0.866**		**0.620**		**2.48**		0.152	U	**1.33**	
R-MW3	34.74 to 24.74	Property	10/24/92	5	U	5	U	–		5	U	5	U
			10/24/92	–		–		–		–		–	
			01/29/09	**4.26**		0.200	U	0.200	U	0.200	U	0.200	U
			06/02/11	1	U	1	U	1	U	1	U	0.2	U
			09/04/12	**6.4**		1	U	1	U	1	U	0.2	U
			03/21/17	**1.38**		**0.714**		**0.575**		0.152	U	0.118	U
			06/28/17	**0.834**		**0.582**		**0.735**		0.152	U	**0.424**	**J**
			04/04/18	**16.4**		**0.972**		**1.35**		0.152	U	**0.214**	**J**
Off Property													
MW-8	28.69 to 14.19	800 Aloha St Parcel	03/20/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/13/18	**0.570**		0.153	U	0.0933	U	0.152	U	0.118	U
MW-9	33.81 to 18.81	8th Ave N ROW	06/20/02	1	U	1	U	1	U	1	U	1	U
			09/04/12	1	U	1	U	1	U	1	U	**0.61**	
			12/16/13	1	U	1	U	1	U	1	U	0.2	U
			03/20/17	0.199	U	0.153	U	**0.140**	**J**	0.152	U	**0.324**	**J**
			06/20/17	0.199	U	0.153	U	**0.214**	**J**	0.152	U	0.118	U
(duplicate)			06/20/17	0.199	U	0.153	U	**0.211**	**J**	0.152	U	0.118	U
			04/05/18	**1.58**		0.153	U	**0.246**	**J**	0.152	U	**0.210**	**J**
			01/21/19	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW-10	30.95 to 15.95	800 Aloha St	06/20/02	1	U	1	U	1	U	1	U	1	U
MW121	26.72 to 16.72	8th Ave N ROW	12/26/13	1	U	1	U	1	U	1	U	**1.3**	
			03/28/17	0.199	U	0.153	U	**0.768**		0.152	U	**5.82**	
			06/20/17	0.199	U	0.153	U	**1.13**		0.152	U	**7.68**	
			04/05/18	**2.93**		0.153	U	**0.959**		0.152	U	**6.45**	
			01/31/19	0.199	U	0.153	U	**5.53**		0.152	U	**19.8**	
MW125	28.55 to 13.55	Valley St ROW	12/26/13	1	U	1	U	1	U	1	U	0.2	U
			03/22/17	**0.285**	**J**	0.153	U	**0.341**	J	0.152	U	0.118	U
			06/28/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/06/18	**0.580**		0.153	U	**0.278**	**J**	0.152	U	0.118	U
			01/21/19	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW-154	27.57 to 13.55	Roy St ROW	04/30/18	**4.46**		**0.230**	**J**	**1.77**		0.152	U	**7.48**	
			01/21/19	**1.70**		**0.330**	**J**	**2.03**		0.152	U	**3.52**	
MW-155	24.05 to 13.55	Roy Street ROW	04/27/18	**3.48**		**0.334**	**J**	**0.466**	**J**	0.152	U	**0.447**	**J**
			01/21/19	**3.72**		**0.581**		**0.274**	**J**	0.152	U	0.118	U

Table 12

Groundwater Analytical Data for Shallow Zone Wells
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
MW-159	22.39 to 13.55	8th Ave N ROW	04/26/18	**0.964**		**0.358**	**J**	**1.09**		0.152	U	0.118	U
			01/21/19	0.199	U	0.153	U	**0.651**		0.152	U	**0.666**	
MW-214 (duplicate)	–	Valley St ROW	03/30/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			03/30/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/09/18	**0.725**		0.153	U	0.0933	U	0.152	U	0.118	U
R-MW5	42.03 to 27.03	Dexter Ave N ROW	10/28/92	0.5	U	0.5	U	0.5	U	–		0.5	U
			01/29/09	**0.800**		0.200	U	0.200	U	0.200	U	0.200	U
			06/02/11	1	U	1	U	1	U	1	U	0.2	U
			09/05/12	1	U	1	U	1	U	1	U	0.2	U
			12/18/13	1	U	1	U	1	U	1	U	0.2	U
			03/23/17	**0.338**	**J**	**0.186**	**J**	0.0933	U	0.152	U	0.118	U
			06/16/17	**0.257**	**J**	**0.245**	**J**	0.0933	U	0.152	U	0.118	U
			04/11/18	**0.621**		0.153	U	0.0933	U	0.152	U	0.118	U
			01/03/19	**0.477**	**J**	0.153	U	0.0933	U	0.152	U	0.118	U
R-MW6	33.28 to 23.28	8th Ave N ROW	10/28/92	**4,500**		**920**		**2,600**		–		**240**	
			11/03/92	**690**		**160**		**620**		–		40	U
			01/29/09	**1.78**		0.200	U	**2.64**		0.200	U	**2.75**	
			05/03/10	1	U	1	U	**1.2**		1	U	**2.8**	
			06/02/11	1	U	1	U	1	U	1	U	**2.1**	
			09/05/12	1	U	1	U	1	U	1	U	0.2	U
			03/21/17	**1.08**		**3.17**		**20.0**		**0.242**	**J**	**8.65**	
			06/20/17	**1.19**		**0.878**		**37.3**		**0.445**	**J**	**43.9**	
			04/06/18	**1.85**		**2.24**		**19.4**		**0.277**	**J**	**26.9**	
			01/25/19	**0.328**	**J**	**1.07**		**12.5**		0.152	U	**9.14**	
SCL-MW101	–	Alley Between 8th & 9th Ave N	03/28/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/14/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/06/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
SCL-MW105	–	Alley Between 8th & 9th Ave N	03/28/17	0.995	U	0.765	U	0.466	U	0.760	U	0.590	U
			06/15/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/06/18	1.99	U	1.53	U	0.933	U	1.52	U	1.18	U
SCS-2	–	800 Aloha St Parcel	03/20/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/12/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/13/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
SMW-3	–	Valley St ROW	03/30/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	UJ
			06/21/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/09/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Table 12

Groundwater Analytical Data for Shallow Zone Wells
Former American Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)				
				PCE	TCE	cDCE	tDCE	VC
			Screening Level	2.4	1	16	100	0.2
Decommissioned Wells								
R-MW4	25.94 to 10.94	Roy St ROW	10/24/92	**814**	**64**	–	5 U	5 U
			10/24/92	**31**	**2.8**	2.0 U	–	2.0 U
			Decommissioned before 2009					
MW-2	–	8th Ave N ROW	06/17/93	**170**	**1,400**	**9,300**	**25**	**1,100**
			Decommissioned on October 12, 1993					
			Number of Samples	150	150	146	144	150
			Number of Detections	93	80	99	51	84
			Frequency of Detection	62%	53%	68%	35%	56%
			Maximum	176,000	13,000	9,300	1,000	1,100
			Minimum	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U

Notes:

VOCs analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C or by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.

* = Monitoring well was installed at a 25 degree angle from the vertical point of penetration.

(dup) = duplicate

ROW = right-of-way

PCE = perchloroethylene (tetrachloroethene)

TCE = trichloroethene

cDCE = cis-1,2-dichloroethene

tDCE = trans-1,2-dichloroethene

VC = vinyl chloride

Laboratory and Results Notes:

Detected results shown in bold, detections above the screening level hightlighted in gray

– = Not analyzed or results not available

B = the same analyte is found in the associated blank

c = Reported as total 1,2,-DCE (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

g = Estimated value. The reported range exceeds the calibration range of the analysis

J = the identification of the analyte is acceptable; the reported value is an estimate

U = not detected at or above the laboratory method detection limit (MDL)

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
Intermediate A Water-Bearing Zone, On Property													
G-MW1	9.01 to 4.01	Property	07/24/01	**85,500**		**1,130**		**23.3**	**g**	**0.956**		**74.5**	**g**
			01/29/09	**78,400**	**f**	**1,160**		**34.4**		**1.49**		0.200	U
			06/03/11	**78,000**		**1,100**		**22**		–		**33**	
			09/06/12	**66,000**		**1,100**		**32**		**1.5**		**35**	
(duplicate)			09/06/12	**64,000**		**1,100**		**30**		**1.4**		**33**	
			Decommissioned										
G-MW3	13.55 to 3.55	Property	07/24/01	**47,700**		**385**	**g**	0.200	U	**3.71**		**42.5**	**g**
			12/10/04	**220,000**		**1,200**		**570**		**6**		**19**	
			01/29/09	**64,000**	**f**	**1,580**		**4,050**		**13.9**		0.200	U
			06/02/11	**33,000**		**1,400**		**1,500**		1000	U	**290**	
			09/06/12	**31,000**		**1,200**		**1,600**		**5.9**		**290**	
			Decommissioned										
MW131	-4.61 to -14.61	Property	03/27/17	0.199	U	0.153	U	**243**		**0.981**		**804**	
			06/20/17	0.995	U	0.765	U	**2.55**		0.760	U	**435**	
			04/16/18	**7.05**		**3.25**		**10.4**		**0.276**	**J**	**18.0**	
			10/25/18	**0.895**		**0.347**	**J**	**1.65**	**J+**	0.152	U	**1.83**	
			12/12/18	0.199	U	**0.172**	**J**	**1.2**		0.152	U	**1.39**	
			1/29/19	0.199	U	0.153	U	**0.774**		0.152	U	**0.539**	
MW-149	0.66 to -9.34	Property	04/10/18	**19,200**		**8,050**		**10,500**		**29.8**		**863**	
			10/25/18	**6,100**		**2,720**		**3,320**		**15.3**		**100**	
			12/13/18	**23,300**		**5,470**		**5,150**		**18.2**		**253**	
(duplicate)			12/13/18	**24,500**		**5,780**		**5,210**		**18.2**		**243**	**J**
			01/29/19	**23,700**		**3,800**		**4,350**		15.2	U	**155**	
MW-151	4.94 to -5.06	Property	04/10/18	**1.13**		**0.310**	**J**	**59.1**	**J-**	**0.388**	**J-**	**11.4**	
			10/25/18	**2.28**		**1.38**		**5.80**		**0.346**	**J**	**7.7**	
			12/14/18	**1,460**		**155**		**1,690**		**4.56**		**530**	
			1/31/19	**106**		**40.4**		**466**		**3.52**		**158**	
Intermediate A Water-Bearing Zone, Off Property													
BB-5	–	South of Mercer St ROW	11/17/97	ND		ND		**1.1**		ND		ND	
			Decommissioned										
BB-7	–	Westlake Ave N ROW	11/17/97	ND		ND		ND		ND		ND	
			Decommissioned										
BB-8	13.69 to 3.69	Roy St ROW	06/24/97	**11,000**		**1,500**		**4,200**		**14**		**280**	
			01/29/09	**896**	**f**	**258**		**441**		**2.45**		**1.48**	
			05/03/10	**510**		**120**		**110**		1	U	**0.27**	
			06/02/11	**170**		**59**		**44**		1	U	0.2	U
			09/05/12	**200**		**41**		**28**		1	U	0.2	U
			12/29/13	**200**		**38**		**24**		1	U	0.2	U
			06/17/15	**170**		**40**		**37**		10	U	**2.0**	

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
BB-8			03/22/17	**30.4**		**4.95**		**3.10**		0.152	U	0.118	U
(continued)			06/14/17	**26.0**		**8.57**		**12.6**		**0.155**	**J**	0.118	U
			04/11/18	**33.7**	**J**	**6.13**	**J**	**4.64**	**J**	0.152	U	0.118	U
(duplicate)			04/11/18	**46.8**	**J**	**8.41**	**J**	**6.28**	**J**	0.152	U	0.118	U
			01/23/19	**133**		**43.1**		**81.5**		**0.402**	**J**	**0.618**	
BB-8A	–	Roy St ROW	01/29/09	**1,290**	**f**	**285**		**549**		**2.96**		**3.86**	
			05/03/10	**810**		**180**		**140**		**1.6**		**0.78**	
			06/02/11	**710**		**170**		**170**		10	U	2	U
			Decommissioned										
BB-12	–	9th Ave	05/19/98	ND		ND		**540**		ND		**380**	
		N ROW	05/02/10	1	U	1	U	1	U	1	U	0.2	U
			Decommissioned										
BB-12A	–	9th Ave	05/02/10	1	U	1	U	1	U	1	U	0.2	U
		N ROW	Decommissioned										
GEI-MW-1	–	739 9th Ave N	09/06/14	**0.250**		**0.240**		1.00	U	0.500	U	0.200	U
GEI-MW-2	–	739 9th Ave N	09/06/14	1.00	U	**0.410**		1.00	U	0.500	U	**1.34**	
GEI-MW-3	–	739 9th Ave N	09/06/14	1.00	U	**0.610**		1.00	U	0.500	U	**3.14**	
GEI-1	1.15 to -8.85	Block 37	03/24/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/13/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW107	8.81 to -1.18	8th Ave N ROW	12/21/12	**47,000**		**2,800**		**5,100**		**41**		**200**	
		(duplicate)	12/21/12	**50,000**		**3,000**		**5,200**		**44**		**270**	
			12/16/13	**32,000**		**2,400**		**4,000**		**34**		**76**	
			06/17/15	**1,900**		**5,000**		**5,000**		100	U	**40**	
			10/20/15	**2,300**		**5,100**		**3,600**		**60**		**27**	
			11/10/15	**620**		**3,800**		**4,400**		**54**		**31**	
			12/11/15	**1200**		**4200**		**4,200**		**57**		**22**	
			01/08/16	**1,000**		**3,600**		**3,900**		**50**		**20**	
			02/01/16	**61**		**220**		**10,000**		**33**		**73**	
			03/27/17	**0.224**	**J**	**0.370**	**J**	**6.82**		**14.0**		**34.5**	
			06/19/17	0.199	U	**0.290**	**J**	**7.29**		**12.6**		**15.0**	
			04/09/18	**0.879**	**J-**	**0.581**	**J-**	**72.1**	**J-**	**10.5**		**123**	
			01/30/19	0.199	U	**41.1**		**1,130**		**14.4**		**474**	
MW108	-7.22 to -17.22	Alley Between	12/21/12	**3.4**		**1.8**		**400**		**2.1**		**210**	**pr**
		8th & 9th	12/17/13	**3.8**		**4.6**		**360**		**3.6**		**150**	
		Ave N	06/17/15	**4.0**		**11**		**370**		**3.5**		**260**	
			10/20/15	**3.0**		**6.4**		**220**		**1.8**		**140**	
			02/02/16	**15**		**7.9**		**290**		**1.8**		**180**	
			03/28/17	**73.1**		**12.5**		**278**		**0.899**		**52.3**	
			06/27/17	**194**		**22.1**		**165**		**0.748**		**52.8**	
			04/06/18	**1,970**		**284**		**1,030**		**7.13**		**217**	

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
MW108 (continued)		(duplicate)	04/06/18	**1,980**		**287**		**1,020**		**7.91**		**231**	
			01/22/19	**4,190**		**587**		**1,180**		**6.03**		**90.8**	
MW109	-0.03 to -10.03	Alley Between 8th & 9th Ave N	12/21/12	**91**		**64**		**18**		1	U	**1.5**	
			12/17/13	**4.0**		**18**		**310**		1	U	**27**	
			06/17/15	**370**		**890**		**520**		**1.2**		**26**	
			10/20/15	**230**		**790**		**400**		20	U	**22**	
			02/02/16	**34**		**330**		**270**		1	U	**19**	
			03/29/17	0.199	U	**0.198**	**J**	**12.6**		0.152	U	**3.49**	
			06/27/17	**9.69**	**J**	**1.17**		**163**		**1.17**		**6.06**	
			04/06/18	1.99	UJ	**210**		**629**		**3.34**		**42.2**	
			01/23/19	0.995	U	**43.8**		**403**		**2.08**		**36.8**	
MW110	4.67 to -5.33	Alley Between 8th & 9th Ave N	12/21/12	**1,100**		**220**		**470**		**3.0**		**33**	
			12/19/13	**930**		**240**		**840**		**3.9**		**31**	
			04/22/15	**1,000**		**210**		**340**		**2.4**		**1**	
			06/17/15	**1,000**		**200**		**470**		10	U	**12**	
			10/20/15	**890**		**180**		**380**		**2.2**		**13**	
			02/01/16	**1,300**		**290**		**460**		**3.0**		**1.1**	
			03/23/17	**1,070**		**389**		**644**		**4.72**		**1.45**	
			06/27/17	**259**		**176**		**1,120**		**2.66**		**152**	
			04/09/18	**375**	**J-**	**253**	**J-**	**675**	**J-**	**3.72**		**3.54**	
			01/23/19	**1,260**		**490**		**673**		**5.83**		**1.39**	
		(duplicate)	01/23/19	**1,120**		**499**		**718**		**6.49**		**1.51**	
MW114	10.84 to 0.84	SDOT Property S of Roy St	12/21/12	**1,400**		**290**		**260**		1	U	**14**	
			12/18/13	**8,400**		**1,300**		**640**		50	U	**22**	
			Destroyed										
MW115	-0.86 to -10.86	9th Ave N ROW	12/13/12	**15**		**1.1**		**3.0**		1	U	**2.6**	
			12/21/12	1	U	**3.0**		**38**		1	U	**16**	
			12/19/13	1	U	1	U	1	U	1	U	**0.75**	
			04/21/15	1	U	**17**		**170**		1	U	**20**	
			06/25/15	1	U	1	U	1	U	1	U	**6.2**	
			10/27/15	1	U	1	U	1	U	1	U	**0.31**	
			02/03/16	1	U	1	U	1	U	1	U	**2.3**	
			03/22/17	0.199	U	0.153	U	**0.643**		0.152	U	**15.7**	
			06/22/17	0.199	U	0.153	U	**0.523**		0.152	U	**8.45**	
			04/11/18	0.199	U	0.153	U	**0.272**	**J**	0.152	U	**5.81**	
			01/30/19	0.199	U	0.153	U	**0.316**	**J**	0.152	U	**12.4**	
MW116	-3.64 to -13.64	9th Ave N ROW	12/07/12	**6.8**		1	U	1	U	1	U	0.2	U
			12/21/12	**2.7**		1	U	1	U	1	U	0.2	U
			12/19/13	1	U	1	U	1	U	1	U	0.2	U

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
MW116 (continued)			06/25/15	1	U	1	U	1	U	1	U	0.2	U
			10/27/15	1	U	1	U	1	U	1	U	0.2	U
			02/03/16	1	U	1	U	1	U	1	U	0.2	U
			03/21/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/16/17	0.199	U	**0.303**	**J**	0.0933	U	0.152	U	0.118	U
			04/11/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			01/30/19	0.199	U	0.153	U	**0.655**		0.152	U	0.118	U
MW117	16.90 to 1.90	Dexter Ave N ROW	02/08/13	1	U	1	U	1	U	1	U	0.2	U
			12/18/13	1	U	1	U	1	U	1	U	0.2	U
			Destroyed										
MW118	12.9 to 2.9	Mercer St ROW	03/25/13	1	U	1	U	1	U	1	U	0.2	U
			12/18/13	1	U	1	U	1	U	1	U	0.2	U
			Destroyed										
MW119	2.35 to -7.65	9th Ave N ROW	03/25/13	1	U	1	U	**3.3**		1	U	0.2	U
			12/19/13	1	U	1	U	**2.5**		1	U	**0.76**	
			04/21/15	**34**		**42**		**50**		1	U	**3.1**	
			06/17/15	**4.9**		**7.1**		**52**		1	U	**2.7**	
			10/20/15	**15**		**22**		**74**		1	U	**0.45**	
			02/02/16	**7.3**		**24**		**100**		1	U	**0.45**	
			03/29/17	**5.47**		**10.7**		**42.9**		**0.334**	**J**	**0.272**	**J**
			06/28/17	**19.0**		**12.4**		**5.99**		**0.167**	**J**	0.118	U
			04/05/18	**2.14**		**3.02**		**18.3**		**0.203**	**J**	0.118	U
			01/21/19	**1.24**		0.153	U	0.0933	U	0.152	U	0.118	U
MW120	0 to -10	8th Ave N ROW	12/19/13	**2.8**		**2.3**		**19**		1	U	**9.6**	
			06/16/15	1	U	1	U	**4.3**		1	U	0.2	U
			10/20/15	1	U	**1.1**		**5.2**		1	U	**0.94**	
			02/01/16	**1.3**		**1.6**		**6.7**		1	U	**1.1**	
			03/28/17	**13.9**		**5.81**		**18.4**		0.152	U	**0.871**	
			06/28/17	**18.0**		**6.97**		**16.0**		0.152	U	**0.988**	
			04/09/18	0.199		0.153	U	**0.811**		0.152	U	0.118	U
			01/24/19	**125**		**34.3**		**60.5**		**0.194**	**J**	**1.64**	
MW127	-0.96 to -10.96	8th Ave N ROW	01/03/14	1	U	1	U	1	U	1	U	**0.29**	
			01/13/14	1	U	1	U	1	U	1	U	**0.30**	
			Decommissioned										
MW-142	2.44 to -7.56	8th Ave N ROW	04/27/18	**0.523**		**1.40**		**46.1**		**0.474**	**J**	**17.2**	
			01/28/19	0.199	U	0.153	U	**5.62**		0.152	U	**3.45**	
		(duplicate)	01/28/19	0.199	U	**0.208**	**J**	**5.67**		0.152	U	**3.38**	
MW-144	3.87 to -6.13	8th Ave N ROW	04/27/18	**1.86**		**3.31**		**662**		**4.65**		**888**	
			01/28/19	0.199	U	**0.251**	**J**	**10.4**		**0.489**	**J**	**40.4**	

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	2.4		1		16		100		0.2	
MW-146	12.94 to 2.94	Roy St ROW	04/30/18	**3.56**		**48.4**		**900**		**6.12**		**2,100**	
			01/22/19	**2.29**		**21.6**		**1,080**		**7.25**		**1,370**	
MW-156	2.04 to -7.96	8th Ave	04/26/18	9.95	U	**581**		**2,850**		**9.97**		**407**	
		N ROW	01/24/19	**1,720**		**723**		**2,050**		**11.5**		11.8	U
Intermediate B Water-Bearing Zone, On Property													
MW130	-30.88 to -40.88	Property	03/03/16	**6,200**		**430**		**300**		1	U	**38**	
			03/29/17	**721**		**830**		**7,880**		**39.3**		**186**	
			06/30/17	**6,760**	**J**	**4,020**		**20,100**		**55.6**		**597**	
		(duplicate)	06/30/17	**11,100**	**J**	**5,310**		**21,300**		**57.3**		**549**	
			05/21/18	**13,500**		**7,400**		**29,500**		**114**		**1,650**	
			12/17/18	**9,650**		**3,220**		**26,400**		**83.5**		**1,420**	
			01/31/19	**23,700**		**4,640**		**27,700**		**107**		**1,740**	
MW-132	-29.90 to -39.90	Property	09/25/17	0.995	U	**1.95**	**J**	**196**		0.760	U	**1.76**	**J**
			04/26/18	**2,830**		**840**		**3,300**		**16.3**		**10.2**	
			10/25/18	**3.53**		**0.750**		**12.1**		**0.254**	**J**	**158**	
			12/13/18	0.995	U	0.765	U	**39.8**		**0.497**	**J**	**199**	
			1/31/19	**22.9**		**1.95**		**108**		**0.506**		**269**	
MW-134	-38.55 to -48.55	Property	09/22/17	0.995	U	0.765	U	**86.2**		0.760	U	**229**	
			04/16/18	**1.49**		0.153	U	**0.287**	**J**	0.152	U	**68.6**	
			10/25/18	0.199	U	0.153	U	0.0933	U	0.152	U	**20.9**	
			12/12/18	0.199	U	0.153	U	**0.259**	**J**	0.152	U	**21.9**	
			01/28/19	0.199	U	0.153	U	**0.609**		0.152	U	**32.4**	
MW-135	-30.89 to -40.89	Property	09/25/17	**10,400**		**2,480**		**16,100**		15.2	U	**82.0**	**J**
			04/25/18	**75,800**		**7,890**		**27,700**		**30.7**		**989**	
			10/25/18	**45,900**		**8,330**		**40,400**		**54.4**		**1,170**	
			12/13/18	**97,200**		**11,000**		**42,100**		**66.6**		**1,380**	
			01/31/19	**56,500**		**9,530**		**37,400**		**68.6**		**1,090**	
MW-136	-32.73 to -42.73	Property	09/25/17	**15.4**		**10.7**		**18.7**		0.152	U	0.118	U
			04/16/18	**2.59**		**0.365**	**J**	**4.73**		0.152	U	**8.57**	
			10/29/18	0.199	U	**0.177**	**J**	**1.44**		0.152	U	**0.236**	**J**
			12/13/18	0.199	U	**0.237**	**J**	**0.962**		0.152	U	0.118	U
			02/01/19	**1.26**		0.293	U	**0.851**		0.152	U	**0.186**	**J**
MW-139	-30.19 to -40.19	Property	09/25/17	0.199	U	0.153	U	**1.42**		0.152	U	**0.246**	**J**
			04/25/18	0.199	U	0.153	U	**0.175**	**J**	0.152	U	0.118	U
			10/25/18	**1.29**		**0.282**	**J**	0.454	U	0.152	U	0.118	U
			12/12/18	0.199	U	0.153	U	**0.216**	**J**	0.152	U	0.118	U
			01/28/19	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
MW-150	-13.25 to -23.25	Property	04/10/18	**2,500**		**3,200**		**9,710**		**21.1**		**766**	
			10/25/18	**15,200**		**8,800**		**17,700**		**49.7**		**1,430**	
			12/12/18	**75.6**		**533**		**32,800**		**242**		**2,040**	
			01/29/19	**303**		**548**		**18,100**		**36.7**	**J**	**1,370**	
MW-152	-10.15 to -20.15	Property	04/10/18	**67,300**		**6,550**		**35,300**		**42.1**		**3,660**	
			10/26/18	**1,960**		**3,150**		**73,000**		**109**		**4,510**	
			12/14/18	**23,600**	**J+**	**6,870**	**J+**	**77,100**	**J+**	**134**	**J+**	**7,830**	**J+**
			01/31/19	**38,300**		**3,920**		**58,400**		**101**		**9,600**	
W-MW-03	-30.77 to -40.77	Property	02/03/12	**5,300**		**220**		**160**		20	U	20	U
			09/06/12	**13**		**2.6**		**20**		1	U	**120**	
			Decommissioned										
W-MW-04*	-32.47 to -41.47	Property	02/03/12	**5,400**		**160**		**54**		20	U	20	U
			09/06/12	**460**		**440**		**1,900**		**4.0**		**630**	
			Decommissioned										
Intermediate B Water-Bearing Zone, Off Property													
BB-10	–	Dexter Ave N	11/13/97	ND		ND		ND		ND		ND	
BB-13	–	Westlake Ave	1998	ND		ND		**2.6**		ND		**1.1**	
		N ROW	05/02/10	1	U	1	U	1	U	1	U	0.2	U
			Decommissioned										
MW111	-33.52 to -43.52	Alley Between	12/21/12	**110**		**32**		**37**		1	U	**1.8**	
		8th & 9th	12/17/13	1	U	1	U	**4.7**		1	U	**17**	
		Ave N	04/22/15	1	U	1	U	**1.7**		1	U	**18**	
			06/17/15	1	U	1	U	**1.5**		1	U	**20**	
			10/20/15	1	U	1	U	1	U	1	U	**8.2**	
			02/02/16	1	U	1	U	**2.3**		1	U	**5.8**	
			03/23/17	0.199	U	0.153	U	**1.40**		0.152	U	**5.22**	
			06/14/17	0.199	U	**0.408**	**J**	**1.24**		0.152	U	**3.22**	
			04/06/18	**0.618**		0.153	U	**16.5**		0.152	U	**121**	
			01/23/19	**0.492**	**J**	**0.176**	**J**	**1.70**		0.152	U	**37.6**	
MW112	-17.51 to -27.51	Dexter Ave	12/21/12	1	U	1	U	1	U	1	U	0.2	U
		N ROW	12/26/13	1	U	1	U	1	U	1	U	0.2	U
			03/22/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/16/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/12/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			12/21/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW126	-54.06 to -64.06	Alley Between	01/03/14	1	U	1	U	1	U	1	U	0.2	U
		8th & 9th	03/28/17	0.199	U	0.153	U	**0.283**	**J**	0.152	U	0.118	U
		Ave N	06/15/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/06/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			01/22/19	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Table 13

Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	2.4		1		16		100		0.2	
MW-143	-27.67 to -37.57	8th Ave N ROW	04/30/18	0.199	U	0.153	U	**129**		**0.512**		**193**	
			01/29/19	0.199	U	0.153	U	**0.241**	**J**	0.152	U	0.118	U
MW-145	-26.14 to -36.14	8th Ave N ROW	04/27/18	0.199	U	**0.212**	**J**	**2.29**		0.152	U	**3.88**	
			01/29/19	0.199	U	0.153	U	**0.316**	**J**	0.152	U	**0.335**	**J**
MW-147	-17.64 to -27.64	Roy St ROW	05/01/18	**19.8**		**83.4**		**399**		**2.09**		**1,150**	
			01/22/19	**98.2**		**179**		**1,230**		**2.88**		**738**	
MW-148	-25.73 to -35.73	Roy St ROW	05/01/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
		(duplicate)	05/01/18	0.199	U	0.153	U	**0.216**	**J**	0.152	U	0.118	U
			01/23/19	**1.24**		**0.347**	**J**	0.0933	U	0.152	U	0.118	U
MW-157	-28.29 to -38.19	8th Ave N ROW	04/26/18	**0.950**		**0.240**	**J**	**10.4**		**0.246**	**J**	**104**	
			01/24/19	0.199	U	**1.65**		**4,250**		**14.2**		**674**	
PW-1	–	Valley St ROW	1997 (8 hr)	**1.0**		ND		ND		ND		ND	
			1997 (Final)	ND		ND		ND		ND		ND	
			Decommissioned										
W-MW-01	-25.12 to -35.12	8th Ave N ROW	02/02/12	**46**		**3.9**		**11**		0.2	U	**0.5**	
			09/06/12	1	U	1	U	**2.0**		1	U	**2.8**	
			06/17/15	1	U	1	U	1	U	1	U	**0.46**	
			10/20/15	1	U	1	U	1	U	1	U	**0.88**	
			01/08/16	1	U	1	U	1	U	1	U	**2.5**	
			02/01/16	1	U	1	U	1	U	1	U	**2.8**	
			03/30/17	**0.330**	**J**	**0.203**	**J**	**0.491**	**J**	0.152	U	**1.83**	**J**
			06/19/17	0.199	U	0.153	U	**0.320**	**J**	0.152	U	**1.09**	
			04/13/18	**5.33**		**1.68**		**1.31**		0.152	U	**8.79**	
			10/29/18	**0.220**	**J**	**0.696**		**0.629**		0.152	U	**3.90**	
			12/13/18	0.199	U	**1.77**		**0.538**		0.152	U	**3.86**	
			01/25/19	0.199	U	**0.587**		**0.459**	**J**	0.152	U	**5.46**	
W-MW-02	-26.54 to -36.54	8th Ave N ROW	02/03/12	**6,900**		**1,700**		**2,000**		20	U	**120**	
			08/13/12	**3,000**		**1,300**		**2,200**		**4.1**		**66**	
			09/05/12	**2,600**		**1,300**		**2,800**		**5.0**		**69**	
			01/03/14	**490**		**1,200**		**4,400**		**7.3**		**67**	
			06/17/15	10	U	10	U	**13,000**		**95**		**2,400**	
			10/20/15	5	Uht	5	Uht	**12,000**	**ht**	**97**	**ht**	**1,700**	**ht**
			11/10/15	1	U	**3.4**		**480**		**3.6**		**110**	
			12/11/15	1	U	**4.9**		**900**		**6.2**		**2,900**	
			01/08/16	1	U	**3.1**		**750**		**26**		**7,500**	
			02/01/16	1	U	**4.6**		**2,900**		**35**		**2,800**	
			03/27/17	0.199	U	**0.259**	**J**	**33.0**		**2.16**		**36.4**	
			06/19/17	0.199	U	0.153	U	**18.2**		**0.746**		**25.6**	
			06/12/18	0.199	U	0.153	U	**4.72**		**0.279**	**J**	**4.95**	

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Groundwater Analytical Data for Intermediate Zone Wells
Former Amereican Linen Supply, 700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
			Screening Level	**2.4**		**1**		**16**		**100**		**0.2**	
W-MW-02			10/26/18	0.199	U	0.153	U	**2.01**		**0.410**	**J**	**1.41**	
(continued)		(duplicate)	10/26/18	0.199	U	0.153	U	**2.11**	**J+**	**0.435**	**J**	**1.8**	
			12/12/18	0.199	U	0.153	U	**1.80**		**0.463**	**J**	**2.30**	
			01/25/19	0.199	U	0.153	U	**1.83**		**0.263**	**J**	**2.01**	
		Number of Analytes Measured		252		252		252		251		252	
		Number of Analytes Detected		142		161		199		108		187	
		Frequency of Detection		56%		64%		79%		43%		74%	
		Maximum Detection		220,000		11,000		77,100	J+	242		9,600	
		Minimum Detection		0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Notes:
VOCs analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C OR by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.
(dup) = duplicate
ROW = right-of-way
PCE = perchloroethylene (tetrachloroethene)
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride

Laboratory and Results Notes:
Detected results shown in bold, detections above the screening level hightlighted in gray
– = Not analyzed or results not available
B = the same analyte is found in the associated blank
c = Reported as total 1,2,-DCE (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
g = Estimated value. The reported range exceeds the calibration range of the analysis
J = the identification of the analyte is acceptable; the reported value is an estimate
U = not detected at or above the laboratory method detection limit (MDL)
ht = The analysis was performed outside the method the method or client-specified holding time requirement.
ND = not detected at a concentration exceeding laboratory reporting limit; detection limit not provided
pr = The sample was received with incorrect preservation. The value reported should be considered an estimate.

Table 14

Groundwater Analytical Data for Deep Zone Wells
700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
				2.4		**1**		**16**		**100**		**0.2**	
On Property													
MW101	-65.51 to -75.51	Property	07/20/12	1	U	1	U	1	U	1	U	0.2	U
			09/06/12	1	U	1	U	1	U	1	U	0.2	U
			Decommissioned in 2013										
MW-133	-88.92 to -98.92	Property	09/25/17	**12.7**		**16.2**		**13.3**		**1.13**		**0.239**	**J**
			04/25/18	**0.646**		**0.516**		**10.7**		**0.315**	**J**	**3.51**	
			10/26/18	**1.92**	**J+**	**1.63**	**J+**	**7.94**		**0.257**	**J**	**3.43**	
			12/12/18	**1.71**		**2.75**		**7.88**		**0.454**	**J**	**5.95**	
			02/01/19	**22.4**		**9.29**		**12.4**		**0.588**		**4.36**	
MW-137	-53.27 to -63.27	Property	09/25/17	**15.0**		**19.1**		**62.0**		0.152	U	0.118	U
			04/12/18	0.199	U	0.153	U	**1.79**		0.152	U	**4.26**	
			10/26/18	**0.896**	**J+**	0.463	U	**0.893**	**J+**	0.152	U	0.118	U
			12/12/18	0.199	U	0.153	U	**0.437**	**J**	0.152	U	**0.357**	**J**
			02/01/19	**1.48**		0.153	U	**0.616**		0.152	U	**0.365**	**J**
MW-141	-55.41 to -65.41	Property	09/22/17	0.199	U	0.153	U	**0.345**	**J**	0.152	U	**0.457**	**J**
			04/12/18	**71.3**	**J+**	**25.6**	**J+**	**91.6**	**J+**	**5.68**	**J+**	**7.01**	**J+**
			10/25/18	0.199	U	0.153	U	**3.10**		0.152	U	0.118	U
			12/12/18	0.199	U	0.153	U	**1.46**		0.152	U	**0.52**	
			01/30/19	0.199	U	0.153	U	**0.479**	**J**	0.152	U	0.118	U
MW-162		Property	02/05/19	**2,800**		**613**		**1,070**		**9.58**		**128**	
MW-163		Property	02/05/19	**218**		**150**		**42.2**		1.00	U	**2.95**	
(duplicate)			02/05/19	**220**		**153**		**40.3**		1.00	U	**3.45**	
MW-164		Property	02/05/19	**871**		**372**		**385**		**3.41**		**4.41**	
Off Property													
FMW-129		SDOT Property S of Roy St	05/23/14	**0.40**		**0.57**		**17**		ND		**7.6**	
			10/20/15	**25**		**39**		**250**		1	U	0.2	U
			02/02/16	**13**		**61**		**240**		1	U	**0.330**	
			04/10/17	**194**		**492**		**1,420**		**5.05**		**0.885**	**J**
			06/23/17	**81.1**		**182**		**474**		**1.21**		**0.413**	
FMW-131	-34.65 to -44.65	Block 37	09/02/16	0.20	U	0.20	U	**41**		0.20	U	**1.7**	
			03/24/17	0.199	U	0.153	U	**45.6**		0.152	U	**0.249**	**J**
			06/23/17	0.199	U	0.153	U	**3.61**		0.152	U	**0.264**	**J**
			12/18/17	0.20	U	0.20	U	**0.61**		0.20	U	0.20	U
FMW-3D	-31.12 to -41.12	Block 31	03/24/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/23/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
GEI-2	-21.12 to -31.12	Block 37	03/24/17	0.199	U	0.153	U	**2.25**		0.152	U	**6.94**	
			06/23/17	0.199	U	0.153	U	**16.3**		0.152	U	**127**	
MW102	-65.81 to -75.81	Valley St ROW	08/16/12	1	U	1	U	1	U	1	U	0.2	U
			09/05/12	1	U	1	U	1	U	1	U	0.2	U
			12/17/13	1	U	1	U	1	U	1	U	0.2	U
			10/27/15	1	U	1	U	1	U	1	U	0.2	U
			02/02/16	1	U	1	U	1	U	1	U	0.2	U

Table 14

Groundwater Analytical Data for Deep Zone Wells
700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
				2.4		**1**		**16**		**100**		**0.2**	
MW102 (continued)			03/29/17	0.199	U	0.153	U	**0.223**	**J**	0.152	U	0.118	U
			06/15/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/25/18	**0.352**	**J**	0.153	U	0.0933	U	0.152	U	0.118	U
			01/24/19	**0.22**	**J**	0.153	U	0.0933	U	0.152	U	0.118	U
MW103	-67.58 to -77.58	Alley Between 8th & 9th Ave N	07/31/12	**12**		**25**		**150**		10	U	**79**	
			09/05/12	**8.3**		**22**		**80**		1	U	**110**	
(duplicate)			09/05/12	**8.1**		**22**		**85**		1	U	**120**	
			12/18/13	**4.3**		**6.1**		**8.6**		1	U	**1.2**	
(duplicate)			12/18/13	**4.0**		**5.2**		**7.1**		1	U	**0.94**	
			06/17/15	**1.8**		**1.4**		1	U	1	U	**0.94**	
			10/20/15	**3.6**		**1.4**		1	U	1	U	**1.6**	
			02/02/16	**1.0**		1	U	**1.2**		1	U	**0.53**	
			03/29/17	1.99	U	**23.1**		**240**		**0.405**	**J**	**157**	
			06/14/17	0.626		**23.0**		**120**		**0.369**	**J**	**69.2**	
			04/06/18	0.199	U	**1.81**		**32.4**		0.152	U	**22.4**	
			01/23/19	**0.365**	**J**	**1.48**		**11.4**		0.152	U	**6.68**	
MW104	-76.32 to -86.32	8th Ave N ROW	08/16/12	1	U	1	U	1	U	1	U	0.2	U
			09/06/12	1	U	1	U	1	U	1	U	0.2	U
			12/17/13	1	U	1	U	1	U	1	U	0.2	U
			10/27/15	**2.6**		**4.4**		**4.3**		1	U	0.2	U
			02/02/16	1	U	**1.2**		**19**		1	U	0.2	U
			03/30/17	0.199	U	0.153	U	**3.97**		0.152	U	0.118	UJ
			06/30/17	**5.83**		**5.21**		**1.54**		0.152	U	0.118	U
			04/09/18	**0.541**		**2.00**		**176**		**1.02**		**32.3**	
			10/26/18	**1.87**	**J+**	**2.94**	**J+**	**71.2**		**0.257**	**J**	**43.5**	
			02/01/19	**12.1**		**3.22**		**30.6**		**0.326**	**J**	**32.4**	
MW105	-85.83 to -95.83	Roy St ROW	08/16/12	1	U	1	U	1	U	1	U	**0.32**	
			09/05/12	1	U	1	U	1	U	1	U	**0.23**	
			12/29/13	1	U	1	U	1	U	1	U	0.2	U
			04/12/15	**1.2**		**1.6**		1	U	1	U	0.2	U
			06/17/15	1	U	1	U	1	U	1	U	0.2	U
			10/27/15	1	U	1	U	1	U	1	U	0.2	U
			02/03/16	1	U	1	U	1	U	1	U	**1.6**	
			04/21/17	0.199	U	0.153	U	**0.155**	**J**	0.152	U	**1.95**	
			06/14/17	0.199	U	**0.356**	**J**	**0.180**	**J**	0.152	U	**0.514**	
			04/11/18	0.199	U	0.153	U	**1.67**		0.152	U	**0.205**	**J**
			01/23/19	**0.790**		**0.317**	**J**	**1.51**		0.152	U	**0.392**	**J**
MW106	-78.01 to -88.01	SDOT Property S of Roy St	08/22/12	1	U	1	U	1	U	1	U	1	U
			09/05/12	1	U	1	U	1	U	1	U	0.2	U
			12/17/13	1	U	1	U	1	U	1	U	0.2	U
			10/27/15	1	U	1	U	1	U	1	U	0.2	U
			02/02/16	1	U	1	U	1	U	1	U	0.2	U
			04/14/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/30/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			05/04/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Table 14

Groundwater Analytical Data for Deep Zone Wells
700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
				2.4		**1**		**16**		**100**		**0.2**	
MW113	-37.06 to -47.06	9th Ave N ROW	12/21/12	**1.3**	**i**	**440**		**5,500**		**4.1**		**150**	
			12/19/13	1	U	**13**		**140**		1	U	**0.41**	
			06/25/15	1	U	**19**		**670**		1	U	**17**	
			10/27/15	1	U	**4.5**		**670**		**1.2**		**17**	
			02/03/16	1	U	**1.1**		**1,500**		**2.2**		**13**	
			03/22/17	0.199	U	**27.1**		**7,280**		**25.4**		**63.5**	
			06/16/17	**0.522**		**148**		**4,750**		**28.2**		**53.3**	
			04/11/18	**191**		**1,100**		**3,720**		**21.3**		**34.9**	
			01/30/19	0.995	U	**2.81**		**6,330**		**22.8**		**34.8**	
			02/07/19	0.199	U	**1.77**		**6,990**		**25.7**		**46.0**	
MW122	-74.97 to -88.97	Alley Between 8th & 9th Ave N	12/23/13	1	U	1	U	1	U	1	U	0.2	U
			10/20/15	1	U	1	U	1	U	1	U	0.2	U
			02/02/16	1	U	1	U	1	U	1	U	0.2	U
			03/28/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/14/17	0.199	U	**0.162**	**J**	0.0933	U	0.152	U	0.118	U
			04/06/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW123	-42.49 to -52.49	Westlake Ave N ROW	12/23/13	1	U	1	U	1	U	1	U	0.2	U
			04/01/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			06/24/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/14/18	**0.284**	**J**	0.153	U	0.0933	U	0.152	U	0.118	U
MW124	-53.76 to -63.76	Valley St ROW	12/26/13	1	U	1	U	1	U	1	U	0.2	U
			03/29/17	**1.60**		**0.596**		**0.661**		0.152	U	0.118	U
(duplicate)			03/29/17	**1.22**		**0.433**		**0.600**		0.152	U	0.118	U
			06/15/17	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			04/13/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
MW128	-30.80 to -40.80	Westlake Ave N ROW	01/13/14	1	U	1	U	**960**	**ve**	1	U	**290**	**ve**
			04/22/15	1	U	1	U	**150**		1	U	**59**	
			10/20/15	1	U	1	U	**7.0**		1	U	**95**	
			02/02/16	1	U	1	U	**70**		1	U	**140**	
			03/29/17	0.199	U	0.153	U	**7.16**		0.152	U	**72.4**	
			06/21/17	0.199	U	0.153	U	**109**		0.152	U	**195**	
			04/09/18	0.199	U	0.153	U	**3.07**		0.152	U	**31.0**	
MW-138	-47.52 to -57.52	Dexter Ave N ROW	09/21/17	0.398	U	0.306	U	0.187	U	0.304	U	0.236	U
			04/11/18	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U
			10/29/18	0.199	U	0.153	U	0.093	U	0.152	U	**0.169**	**J**
			01/03/19	0.199	U	0.153	U	0.093	U	0.152	U	0.118	U
MW-140	-78.93 to -88.93	Roy St ROW	09/22/17	0.199	U	**0.450**	**J**	**0.477**	**J**	0.152	U	0.118	U
(duplicate)			09/22/17	0.199	U	**0.456**	**J**	**0.523**		0.152	U	0.118	U
			04/12/18	**0.402**	**J+**	**0.572**	**J+**	**2.47**	**J+**	0.152	U	**0.246**	**J+**
MW-153	-65.25 to -75.25	Roy St ROW	05/01/18	**0.756**		0.153	U	**0.612**		0.152	U	**9.56**	
			01/22/19	0.199	U	0.153	U	**1.41**		0.152	U	**15.9**	
MW-158A	-48.15 to -58.49	8th Ave N ROW	04/30/18	**17.7**		**18.7**		**59.6**	**J**	**0.205**	**J**	**8.91**	
			01/24/19	0.199	U	**0.325**	**J**	**2.54**		0.152	U	**7.58**	

Table 14

Groundwater Analytical Data for Deep Zone Wells
700 Dexter Avenue North, Seattle, Washington

Sample Location	Well Screen Elevation (ft)	Sample Area	Sample Date	Analytical Results (micrograms per liter)									
				PCE		TCE		cDCE		tDCE		VC	
				2.4		**1**		**16**		**100**		**0.2**	
MW-160	-76.49 to -86.49	8th Ave	05/21/18	**0.380**	**J**	**0.835**		**2.96**		0.152	U	0.118	U
		N ROW	01/25/19	0.199	U	**0.263**	**J**	**5.08**		0.152	U	0.118	U
MW-161	-88.49 to -98.49	8th Ave	05/21/18	**2.01**		**1.79**		**1.89**		0.152	U	0.118	U
		N ROW	01/25/19	**0.472**	**J**	**1.66**		**1.26**		0.152	U	0.118	U
			Number of Samples	126		126		126		126		126	
			Number of Detections	45		53		77		24		67	
			Frequency of Detection	36%		42%		61%		19%		53%	
			Maximum	2,800		1,100		7,280		28.2		290	ve
			Minimum	0.199	U	0.153	U	0.0933	U	0.152	U	0.118	U

Notes:
VOCs analyzed by EPA Methods 8015, 8020, 8021B, 8240, 8260B, or 8260C or by Purge and Trap Gas Chromatogram/Mass Spectrometry or EPA Method 601, 8010S, 8240, 8260B, or 8260C.
(dup) = duplicate
PCE = perchloroethylene (tetrachloroethene)
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride

Laboratory and Results Notes:
Detected results shown in bold, detections above the screening level hightlighted in gray
– = Not analyzed or results not available
B = the same analyte is found in the associated blank
c = Reported as total 1,2,-DCE (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
g = Estimated value. The reported range exceeds the calibration range of the analysis
J = the identification of the analyte is acceptable; the reported value is an estimate
U = not detected at or above the laboratory method detection limit (MDL)
ND = not detected at a concentration exceeding laboratory reporting limit; detection limit not provided
ve = estimated value due to the reported range exceeding the calibration range of the analysis
i = the presence of the analyte indicated may be due to carryover from previous sample injections

Table 15

Groundwater Monitored Natural Attenuation Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg $CaCO_3$/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
Shallow Water-Bearing Zone															
F13	Property	3/27/17	PES	**266**	**8.85**	0.0227 U	**68.3**	**10.0**	**24.2**	**1.0**	**23.2**	**0.651**	**510**	0.296 U	0.422 U
		6/22/17	PES	**484**	**12.6**	0.0227 U	**6.13**	**10.9**	**29.3**	**1.5**	**27.8**	**0.806**	**2,610**	0.296 U	0.422 U
J5	Property	3/21/17	PES	**53.4**	**28.0**	**0.0584 J**	**16.3**	**4.10**	**1.09**	**0.6**	**0.49**	**0.474**	**2,370**	0.296 U	**29.4**
		6/26/17	PES	**209**	**45.1**	0.0227 U	**8.85**	**11.4**	**2.91**	–	–	**2.24**	**9,600**	**19.6**	**34.4**
J15	Property	3/27/17	PES	**476**	**24.2**	0.0227 U	**55.8**	**20.0**	**5.52**	**2.0**	**3.5**	**3.34**	**3,100**	0.296 U	0.422 U
		6/26/17	PES	**486**	**22.0**	0.0227 U	**60.3**	**19.1**	**2.66**	**1.5**	**1.2**	**3.09**	**2,220**	0.296 U	0.422 U
(dup)		6/26/17	PES	**543**	**22.1**	0.0227 U	**60.4**	**19.0**	**3.02**	**1.5**	**1.5**	**3.03**	**2.34**	0.296 U	0.422 U
K8	Property	3/21/17	PES	**70.3**	**10.1**	**0.103**	**27.2**	**5.93**	**0.0622 J**	0	**0.0622**	**0.242**	**41.4**	0.296 U	0.422 U
		6/26/17	PES	**97.5**	**14.7**	**0.307**	**25.8**	**6.45**	**0.0411 J**	0	**0.0411**	**0.296**	**72.7**	0.296 U	0.422 U
M15	Property	3/27/17	PES	**830**	**11.6**	0.0227 U	**40.4**	**11.4**	**3.76**	**2.75**	**1.01**	**6.07**	**11,500**	0.296 U	0.422 U
(dup)		3/27/17	PES	**817**	**11.6**	0.0227 U	**40.4**	**11.7**	**3.77**	–	–	**6.17**	**10,400**	0.296 U	0.422 U
		6/26/17	PES	**904**	**11.0**	0.0227 U	**47.2**	**11.0**	**3.32**	–	–	**6.32**	**7,250**	0.296 U	0.422 U
MW121	8th Ave N ROW	12/26/13	SES	**790**	**18.6**	0.0250 U	**200**	**–**	**2.39**	**1.90**	**0.49**	**6.47**	**346**	5 U	5 U
		3/28/17	PES	**848**	**12.2**	0.0227 U	**643**	**17.9**	**33.3**	**2.0**	**31.3**	**13.2**	**479**	**2.04**	0.422 U
		6/20/17	PES	**930**	**13.3**	0.0227 U	**61.2 J**	**16.5**	**27.1**	**3.0**	**24.1**	**11.0**	**2,140**	**8.88**	0.422 U
MW125	Valley Street ROW	12/26/13	SES	**650**	**112**	**0.076**	**12.8**	**–**	**2.39**	**1.47**	**0.92**	**1.85**	**455**	**6.34**	5 U
MW-9	8th Ave N ROW	12/16/13	SES	**56**	**3.76**	**0.059**	**6.08**	**–**	**3.32**	**3.41**	**0**	**0.778**	**6.24**	5 U	5 U
N7	Property	3/30/17	PES	**118**	**4.73**	**6.87**	**25.2**	**1.35**	**0.120**	0.0	**0.12**	**1.50**	**11,000**	0.296 U	0.422 U
		6/27/17	PES	**235**	**8.76**	**6.290**	**48.4**	**2.71**	**1.45**	**0.25**	**1.20**	**3.31**	**8,430**	0.296 U	0.422 U
R-MW5	Dexter Ave N ROW	3/23/17	PES	**183**	**32.2**	**0.0549 J**	**33.0**	**3.94**	**2.94**	**1.0**	**1.94**	**4.24**	**118**	0.296 U	0.422 U
		6/16/17	PES	**152**	**58.3**	**0.253**	**21.8**	**2.59**	**2.74**	–	–	**1.29**	**275**	0.296 U	0.422 U
R-MW6	8th Ave N ROW	3/21/17	PES	**586**	**5.72**	**0.191**	**119**	**6.28**	**5.02**	–	–	**6.24**	**9,410**	0.296 U	0.422 U
		6/20/17	PES	**718**	**11.1**	0.023 U	**85.7**	**13.6**	**27.0**	**1.5**	**25.5**	**8.28**	**6,980**	**10.7**	**11.2**
Intermediate "A" Water-Bearing Zone															
BB-8	Roy Street ROW	12/29/13	SES	**270**	**12.6**	**3.68**	**84.6**	**–**	**0.085**	**0.01**	**0.08**	**0.252**	5 U	5 U	5 U
		3/22/17	PES	**254**	**7.87**	**3.17**	**41.5**	**2.25**	**0.125**	0	**0.125**	**0.0705**	**0.412** J	0.296 U	0.422 U
		6/14/17	PES	**290**	**10.2**	**2.74**	**56.9**	**3.34**	**0.0348 J**	0	**0.035**	**0.0475**	0.287 U	0.296 U	0.422 U
		4/11/18	PES	**258**	**7.43**	**3.41**	**3.98**	**3.24**	**0.145**	0	**0.145**	**0.0940**	0.287 U	0.296 U	0.422 U
	(dup)	4/11/18	PES	**262**	**7.42**	**3.17**	**3.98**	**3.14**	**0.0962**	0	**0.096**	**0.0544**	0.287 U	0.296 U	0.422 U
		1/23/19	PES	**280**	**12.4**	**0.891**	**93.3**	**3.43**	**0.0954 J**	–	–	**0.082 J**	**111**	**0.735 J**	0.422 U
GEI-1	Block 37	3/24/17	PES	**564**	**8.9**	0.0227 U	0.0774 U	**11.7**	**23.8**	**1.0**	**22.8**	**3.10**	**20,500**	0.296 U	0.422 U
		6/13/17	PES	**304**	**15**	**0.0792 J**	**25.3**	**6.73**	**9.05**	–	–	**1.50**	**10,600**	0.296 U	0.422 U
MW107	8th Ave N ROW	12/16/13	SES	**340**	**70.8**	0.025 U	**165**	**–**	**1.35**	**0.43**	**0.92**	**0.358**	**8.69**	5 U	5 U
		3/27/17	PES	**559**	**122**	**0.0262**	0.0774 U	**147**	**17.6**	**2.0**	**15.6**	**1.12**	**8.38**	0.296 U	**159**
		6/19/17	PES	**651**	**90**	0.0227 U	0.0774 U	**91.0**	**10.5**	**1.5**	**9.0**	**0.955**	**7350**	0.296 U	**205**
		4/9/18	PES	**692**	**675**	0.0227 U	**3.54 J**	**26.3**	**4.84**	**4.0**	**0.8**	**1.21**	**6,700**	**44.2**	**38.1**
		1/30/19	PES	**564**	**49.2**	0.0227 U	**37.1**	**14.5**	**2.35**	**–**	**–**	**0.947**	**14,500**	**89.2**	**70.3**
MW108	Alley Between	12/17/13	SES	**600**	**25.8**	**0.075**	**12.5**	**–**	**17.5**	**21.7**	**0**	**1.96**	**2,110**	**22.8**	5 U
	8th & 9th Ave N	3/28/17	PES	**577**	**22.1**	0.0227 U	**106**	**7.32**	**19.7**	**2.5**	**17.2**	**2.27**	**1,740**	**36.4**	**2.20**
		6/27/17	PES	**679**	**20.6**	0.0227 U	**101**	**8.62**	**21.8**	**2.0**	**19.8**	**2.20**	**3,940**	**47.8**	0.42 U

Table 15

Groundwater Monitored Natural Attenuation Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg $CaCO_3$/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L) Total	Iron (mg/L) Ferrous	Iron (mg/L) Ferric	Total Manganese (mg/L)	Dissolved Gases (µg/L) Methane	Dissolved Gases (µg/L) Ethane	Dissolved Gases (µg/L) Ethene
MW109	Alley Between	12/17/13	SES	**670**	**16.1**	0.0250 U	**34.6**	–	**12.6**	**16.2**	0	**4.04**	**1,400**	**5.89**	5 U
	8th & 9th Ave N	3/29/17	PES	**498**	**6.90**	**0.0255 J**	**31.4**	**10.8**	**12.0**	**1.5**	**10.5**	**3.01**	**2,000**	**7.21**	0.422 U
		6/17/17	PES	**693**	**13.3**	0.0227 U	**42.5**	**12.2**	**14.6**	**1.5**	**13.1**	**3.90**	**2,540**	**8.65**	0.422 U
MW110	Alley Between	12/19/13	SES	**390**	**20.4**	**0.603**	**158**	–	**0.079**	**0.04**	**0.04**	**3.28**	**7.66**	5 U	5 U
	8th & 9th Ave N	3/23/17	PES	**425**	**36.2**	**0.652**	**108**	**7.98**	**0.948 J**	**0.1**	**0.848**	**3.90**	**125**	**1.21 J**	0.422 U
		6/27/17	PES	**516**	**27.0**	0.0227 U	**160**	**4.91**	**0.115**	0	**0.115**	**2.13**	**95.5**	**17.4**	0.422 U
MW114	SDOT Property S of Roy	12/18/13	SES	**190**	**31.2**	**0.032**	**98.8**	–	**0.075**	**0.03**	**0.05**	**0.629**	5 U	5 U	5 U
MW115	9th Ave N ROW	12/19/13	SES	**580**	**22.1**	0.0250 U	**3.35**	–	**6.24**	**6.69**	0	**1.44**	**2,550**	5 U	5 U
		3/22/17	PES	**417**	**28.5**	0.0227 U	**35.9**	**7.69**	**5.69**	**1.5**	**4.19**	**1.32**	**215**	0.296 U	0.422 U
		6/22/17	PES	**401**	**33.0**	0.0227 U	**46.1**	**7.39**	**6.19**	**1.5**	**4.69**	**1.19**	**3,570**	**4.98**	0.422 U
MW116	9th Ave N ROW	12/19/13	SES	**310**	**26.2**	0.0250 U	**14.5**	–	**2.48**	**2.65**	0	**1.14**	**1,750**	5 U	5 U
		3/21/17	PES	**432**	**22.0**	0.0227 U	**25.7**	**7.34**	**6.01**	**3.9**	**2.11**	**0.869**	**8,590**	0.296 U	0.422 U
		6/16/17	PES	**377**	**25.1**	0.0227 U	**9.31**	**6.80**	**6.69**	**1.8**	**4.89**	**0.793**	**8,610**	0.296 U	0.422 U
MW117	Dexter Ave N ROW	12/18/13	SES	**200**	**9.11**	0.0250 U	**56.3**	–	**1.49**	**2.03**	0	**0.344**	5 U	5 U	5 U
MW119	9th Ave N ROW	12/19/13	SES	**310**	**12.1**	0.0250 U	**3.34**	–	**19.4**	**18.6**	**0.8**	**2.55**	**3,450**	5 U	5 U
		3/29/17	PES	**255**	**20.5**	**0.164**	**14.9**	**6.84**	**17.1**	**2.0**	**15.1**	**2.98**	**819**	0.296 U	0.422 U
		6/28/17	PES	**360**	**13.7**	0.0227 UJ	**56.1**	**9.09**	**5.66**	**1.5**	**4.2**	**1.25**	**73.5**	0.296 U	0.422 U
MW120	8th Ave N ROW	12/19/13	SES	**290**	**36.5**	**0.0690**	**99.4**	–	**0.288**	**0.17**	**0.12**	**0.319**	**10.1**	5 U	5 U
		4/9/18	PES	**151**	**30.2**	**0.237**	**66.9**	**1.08**	**1.40**	0	**1.40**	**0.194**	0.287 U	0.296 U	0.422 U
		1/24/19	PES	**206**	**22.4**	**1.98**	**73.6**	**1.78**	**3.68**			**0.387**	**235**	**2.71**	0.422 U
MW131	Property	3/27/17	PES	**911**	**141**	0.0227 U	0.0774 U	**8.93**	**7.98**	**1.90**	**6.08**	**1.06**	**16,200**	0.296 U	**280**
		6/20/17	PES	**1,050**	**122**	0.0227 U	**0.724 J**	**10.8**	**7.42**	–	–	**1.01**	**10,700**	0.296 U	**332**
		4/16/18	PES	**712**	**114**	0.0227 U	0.0774 U	**44.2**	**7.97**	**1.8**	**6.2**	**1.19**	**29,900**	**329**	**467**
MW-142	8th Ave N ROW	4/27/18	PES	**794**	**15.6**	0.0227 U	**0.426 J**	**33.7**	**3.16**	**1.50**	**1.66**	**2.58**	**7,980**	**44.6**	0.422 U
		1/28/19	PES	**784**	**10.1**	0.0227 U	0.0774 U	**27.7**	**2.87**	**2.0**	**0.87**	**2.37**	**3,530**	**17.7**	0.422 U
(dup)		1/28/19	PES	**779**	**10.2**	0.0227 U	0.0774 U	**28.3**	**2.66**	**2.0**	**0.66**	**2.46**	**3,490**	**18.5**	0.422 U
MW-144	8th Ave N ROW	4/27/18	PES	**740**	**182**	0.0227 U	**9.39**	**159**	**1.07**	**0.50**	**0.57**	**1.98**	**17,700**	**55.4**	**5,480**
		1/28/19	PES	**735**	**149**	0.0227 U	0.0774 U	**15.1**	**1.98**	–	–	**1.66**	**13,700**	**495**	**1,140**
MW-146	8th Ave N ROW	4/30/18	PES	**363**	**30.4**	0.0227 U	**22.3**	**4.47**	**2.65**	**1.25**	**1.40**	**1.26**	**9,240**	**11.9**	**489**
		1/22/19	PES	**249**	**15.8**	0.0227 U	**32.1**	**3.43**	**1.76**	**2.0**	0.0	**0.56**	**2,460**	**1.84**	**107**
MW-149	Property	4/10/18	PES	**504**	**44.6**	0.0227 U	**16.9**	**9.94**	**2.18**	**1.80**	**0.38**	**2.70**	**14,400**	**414**	**363**
		12/13/18	PES	**407**	**7.71**	0.0227 U	**225**	**75.1**	**26.1**			**12.8**	**11,400**	**2,430**	**35.9**
		1/30/19	PES							0.0	**0.0**				
MW-151	Property	4/10/18	PES	**409**	**65.5**	**0.0870 J**	**2.08 J**	**39.2**	**1.38**	**0.80**	**0.58**	**0.536**	**36,500**	**83.3**	**1,440**
		12/14/18	PES	**618**	**32.2**	0.0227 U	**702**	**335**	**138**			**11.8**	**18,900**	**68.4**	**68.4**
MW-156	8th Ave N ROW	4/26/18	PES	**436**	**46.3**	0.0227 U	**25.0**	**10.7**	**10.2**	0	**10.20**	**1.13**	**2,250**	**28.4**	**23.8**
		1/24/19	PES	**554**	**25.1**	0.0227 U	**67.6**	**34.3**	**3.42**			**6.59**	**2,470**	**44.8**	0.422 U
Intermediate "B" Water-Bearing Zone															
MW111	Alley Between	12/17/13	SES	**170**	**47.3**	0.025 U	**4.73**	–	**0.168**	**0.18**	0	**0.135**	**14.7**	5 U	5 U
	8th & 9th Ave N	3/23/17	PES	**179**	**22.9**	**0.0680 J**	**8.25**	**0.918 J**	**0.391**	**0.1**	**0.3**	**0.151**	**136**	**5.75**	**4.17**
		6/14/17	PES	**202**	**23.2**	0.0227 U	**8.97**	**1.20**	**0.298**	–	–	**0.142**	**231**	**7.73**	**6.71**

Table 15

Groundwater Monitored Natural Attenuation Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg $CaCO_3$/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
MW112	Dexter Ave N ROW	12/26/13	SES	**160**	**12.3**	**0.0640**	**44.9**	**–**	**0.560**	**0.23**	**0.33**	**0.106**	5 U	5 U	5 U
		3/22/17	PES	**188**	**10.6**	0.0227 U	**45.2**	**1.35**	**0.238**	–	–	**0.0411**	**4.89**	0.296 U	0.422 U
		6/16/17	PES	**240**	**1.15**	**0.162**	**1.26 J**	**5.48**	**2.56**	–	–	**0.0871**	**1.78**	0.296 U	0.422 U
		4/12/18	PES	**16.7 J**	**2.09**	**0.398 J**	**1.31 J**	**2.80**	**19.5**	0.0	**19.5**	**0.421**	**326**	0.296 U	0.422 U
		12/22/18	PES	**41.6**	**9.72**	**0.0683 J**	**0.342 J**	**5.51**	**22.6**	–	**–**	**0.573**	**373**	0.296 U	0.422 U
MW-132	Property	4/26/18	PES	**542**	**30.1**	0.0227 U	**10.6**	**18.6**	**9.59**	–	–	**2.04**	**4,640**	**75.9**	0.422 U
		12/13/18	PES	**260**	**40.4**	0.0227 U	**7.21**	**3.4**	**0.544**	**–**	**–**	**0.278**	**89.7**	**0.925 J**	**41.0**
MW130	Property	3/29/17	PES	**276**	**100**	0.0227 U	**7.07**	**10.7**	**1.19**	**1.0**	**0.19**	**0.555**	**619**	**1.62**	**30.0**
		6/30/17	PES	**339**	**115**	0.0227 U	**6.23**	**1.84 J J**	**0.907**	0.0	**0.907**	**0.532**	**1,040**	**2.47**	**64.5**
	(dup)	6/30/17	PES	**335**	**111**	0.0227 U	**6.16**	**9.68 J J**	**0.876**	0.0	**0.876**	**0.527**	**1,120**	**2.33**	**69.1**
		5/21/18	PES	2.71 U	**135**	**265**	**1.68 J**	**7.54**	**5.44**	0.0	**5.44**	**0.727**	**1,760**	**33.6**	**284**
		12/17/18	PES	**384**	**143**	0.0227 U	**17.3**	**12.6**	**2.26**	0.0	**2.26**	**0.490**	**324**	**8.36**	**166**
MW-132	Property	4/26/18	PES	**542**	**30.1**	0.0227 U	**10.6**	**18.6**	**9.59**	–	–	**2.04**	**4,640**	**75.9**	0.422 U
		12/13/18	PES	**260**	**40.4**	0.0227 U	**7.21**	**3.4**	**0.544**	**–**	**–**	**0.278**	**89.7**	**0.925 J**	**41.0**
MW-134	Property	4/16/18	PES	**298**	**38**	0.0227 UJ	**1.30 J**	**3.27**	**292**	0.00	**292**	**5.00**	**5,200**	**61.3**	**952**
MW-135	Property	4/25/18	PES	**273**	**118**	0.0227 U	**21.9**	**6.21**	**1.74**	**1.50**	**0.24**	**0.656**	**333**	**18.1**	**131**
		12/13/18	PES	**379**	**128**	0.0227 U	**61.8**	**18.1**	**4.95**	**0.75**	**4.20**	**1.450**	**2,060**	**56.1**	**327**
MW-136	Property	4/16/18	PES	**241**	**22.1**	**0.165**	**0.638 J**	**15.1**	**21.4**	**0.60**	**20.8**	**0.618**	**5,510**	**8.52**	**5.77**
MW-139	Property	4/25/18	PES	**212**	**21.9**	0.0227 R	**2.21 J**	**28.5**	**1.13**	**0.75**	**0.38**	**0.251**	**4.28**	**8.04**	0.42 U
MW-143	8th Ave N ROW	4/30/18	PES	**448**	**66.5**	0.0227 U	**4.69 J**	**2.55**	**2.08**	**0.50**	**1.58**	**0.390**	**6,720**	**92.5**	**360**
		1/29/19	PES	**400**	**58.5**	0.0227 U	**3.12 J**	**7.02**	**1.6**			**0.378**	**8,520**	**134**	0.422 U
MW-145	8th Ave N ROW	4/27/18	PES	**272**	**74.4**	**0.238**	**71.0**	**8.09 J**	**42.9**	0.00	**42.9**	**0.912**	**2,050**	0.296 U	**18.5**
		1/29/19	PES	**255**	**43.5**	**0.219**	**55.4**	**4.80**	**4.85**			**0.193**	**276**	0.296 U	0.422 U
MW-147	Roy Street ROW	5/1/18	PES	**302**	**40.8**	0.0227 U	**183**	**21.3**	**17.1**	–	–	**0.564**	**5,060**	**10.7**	**144**
		1/22/19	PES	**302**	**56.2**	0.0227 U	**43.2**	**5.2**	**6.01**	1.00	5.01	**0.646**	**4,210**	**2.10**	**100**
MW-148	Roy Street ROW	5/1/18	PES	**170**	**22.2**	0.0227 U	**95.5**	**2.46**	**12.0**	**0.25**	**11.8**	**0.439**	**1,210**	0.296 U	0.422 U
	(dup)	5/1/18	PES	**162**	**22.5**	0.0227 U	**96.1**	**2.53**	**11.2**	**0.25**	**11.0**	**0.379**	**1,140**	0.296 U	0.422 U
		1/23/19	PES	**151**	**17.7**	0.0227 U	**154**	**4.04**	**10.1**	–	–	**0.594**	**1390**	0.296 U	**2.84**
MW-152	Property	4/10/18	PES	**312**	**128**	0.0227 U	**15.0**	**13.2**	**0.210**	0.00	**0.21**	**0.386**	**1,590**	**41.1**	**1,830**
		12/14/18	PES	**299**	**181**	0.0227 U	**31.6**	**16.9**	**3.82**	**1.0**	**2.8**	**1.46**	**3,710**	**32.2**	**2,050**
MW-157	8th Ave N ROW	4/26/18	PES	**201**	**27.8**	0.0227 U	**4.51 J**	**2.86**	**1.02**	–	–	**0.209**	**111**	**0.779 J**	**36.6**
		1/24/19	PES	**421**	**43.2**	0.0227 U	**24.1**	**12.9**	**5.25**	**3.0**	**2.3**	**1.17**	**4,970**	**37.4**	**124**
W-MW-01	8th Ave N ROW	3/30/17	PES	**211**	**23.8**	0.023 U	**29.0**	**1.84**	**18.2**	**0.25**	**18.0**	**0.542**	**367**	**0.757 J**	**1.27 J**
		6/19/17	PES	**250**	**27.6**	**0.0727 J**	**28.3**	**3.00**	**9.48**	–	–	**0.321**	**461**	0.296 U	0.42 U
		4/13/18	PES	**214**	**26.8**	0.0227 U	**61.4**	**2.95**	**20.4**	**0.8**	**19.6**	**0.717**	**702**	**5.81**	**7.55**
		1/25/19	PES	**235**	**31.7**	0.0227 UJ	**56.9**	**7.93**	**11.1**	**1.5**	**9.6**	**0.552**	**291**	**2.43**	**3.41**
W-MW-02	8th Ave N ROW	12/16/13	SES	**240**	**105**	0.025 U	101	**–**	**0.672**	**0.87**	0	**0.676**	**8.91**	5 U	5 U
		3/27/17	PES	**455**	**142**	0.0227 UJ	0.0774 U	**204**	**47.5**	**1.75**	**45.8**	**4.12**	**6,740**	0.296 U	**8.32**
		6/19/17	PES	**520**	**103**	0.0227 UJ	0.0774 U	**116**	**33.7**	**1.5**	**32.2**	**2.98**	**16,900**	0.296 U	**3.71**
		6/12/18	PES	**854**	**77.9**	0.0227 R	0.0774 U	**97.7**	**21.1**	**3.4**	**17.7**	**3.45**	**23,800**	**14.3**	**57.9**
		1/25/19	PES	**876**	**91**	**0.0665 J**	0.0774 U	**33.7**	**20.8**	**2.0**	**18.8**	**3.71**	**11,300**	**0.67 J**	0.422 U

Table 15

Groundwater Monitored Natural Attenuation Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg $CaCO_3$/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
Deep Water-Bearing Zone															
FMW-129	SDOT Property S of Roy	4/10/17	PES	**308**	**44.2**	0.0227 U	**124**	**2.74**	**0.365**	0.00	**0.365**	**0.402**	**279**	**26.8**	0.422 U
		6/23/17	PES	**296**	**36.1**	**0.0914 J**	**95.5**	**1.70**	**9.92**	**1.00**	**8.92**	**0.412**	**276**	**14.7**	0.422 U
FMW-131	Block 37	3/24/17	PES	**166**	**6.12**	0.0227 U	**0.738**	**2.18**	**0.598**	**0.5**	**0.098**	**1.03**	**159**	**1.19 J**	0.422 U
		6/23/17	PES	**273**	**28.1**	**0.109**	**29.2**	**1.56**	**2.39**	**0.3**	**2.14**	**1.26**	**87.4**	0.296 U	0.422 U
GEI-2	Block 37	3/24/17	PES	**420**	**12.5**	0.0227 U	0 U	**8.14**	**24.0**	**0.25**	**23.8**	**0.898**	**15.1**	0.296 U	0.422 U
		6/23/17	PES	**458**	**23.0**	0.0227 U	0 U	**6.84**	**14.9**	**1.00**	**13.9**	**0.483**	**10,500**	**23.8**	**42.5**
MW102	Valley Street ROW	4/25/18	PES	**160**	**4.99**	**0.0315 J**	**0.880 J**	**1.94**	**9.60**	**1.00**	**8.60**	**0.414**	**0.561**	0.296 U	0.422 U
		1/24/19	PES	**162**	**5.19**	**0.0553 J**	**1.74 J**	**4.36**	**6.46**	0.0	**6.46**	**0.363**	**172**	0.296 U	0.422 U
MW103	Alley Between	12/18/13	SES	**380**	**48.8**	0.025 U	**0.99**	**–**	**1.14**	**1.39**	0	**1.10**	**67.5**	**9.14**	**13.5**
	8th & 9th Ave N	3/23/17	PES	**337**	**48.4**	0.0227 U	**36.3**	**1.97**	**1.68**	**0.25**	**1.43**	**1.09**	**433**	**82.5**	**34.1**
		6/14/17	PES	**339**	**34.7**	0.0227 U	**28.1**	**2.58**	**4.56**	–	–	**0.936**	**863**	**84.6**	**43.1**
MW104	8th Ave N ROW	12/17/13	SES	**310**	**28.9**	0.025 U	**23.1**	**–**	**5.45**	**5.03**	**0.42**	**0.757**	**25.4**	5 U	5 U
		3/30/17	PES	**253**	**36.0**	0.0227 U	**18.8**	**3.44**	**0.487**	–	–	**0.178**	**170**	**3.35**	**2.71**
		6/30/17	PES	**218**	**11.7**	0.0227 U	**6.05**	**1.68**	**1.77**	0.0	**1.8**	**0.360**	**40.6**	0.296 U	0.422 U
		4/9/18	PES	**224**	**17.2**	0.0227 U	**0.594 J**	**7.13 J**	**0.793**	**0.3**	**0.49**	**0.263**	**398**	0.296 U	**5.71**
		2/1/19	PES							0.0	0.0				
MW105	Roy Street ROW	12/29/13	SES	**440**	**48.3**	**0.716**	**29.3**	**–**	**2.91**	**2.0**	**0.9**	**1.24**	**44.5**	5 U	**6.14**
		4/11/18	PES	**257**	**35.7**	0.0227 U	**9.48**	**3.27**	**5.70**	**0.75**	**4.95**	**0.799**	**2,700**	**4.41**	0.422 U
		1/23/19	PES	**210**	**28.1**	0.0227 U	**11.0**	**1.96**	**13.8**	–	–	**0.809**	**286**	0.296 U	**4.19**
MW106	SDOT Property S of Roy	4/14/17	PES	**309**	**28.7**	0.0227 U	**17.9**	**5.93**	**14.1**	0.0	**14.1**	**1.08**	**79.5**	0.296 U	**2.62**
		6/30/17	PES	**305**	**27.3**	0.0227 U	**18.0**	**10.0**	**4.96**	0.0	**5.0**	**0.779**	**38.7**	0.296 U	0.442 U
		5/4/18	PES	**283**	**25.0**	0.0227 U	**10.4**	**1.74**	**0.164**	0.0	**0.16**	**0.496**	**77.8**	0.296 U	**10.8**
MW113	9th Ave N ROW	12/19/13	SES	**96**	**23.5**	**0.280**	**17.4**	**–**	**0.119**	**0.03**	**0.09**	**0.0248**	5 U	5 U	5 U
		3/22/17	PES	**594**	**65.5**	**0.0295 J**	**55.4**	**27.0**	**7.46**	**4.0**	**3.46**	**0.757**	**3.53**	0.296 U	0.422 U
		6/16/17	PES	**587**	**57.5**	0.0227 U	**41.9**	**18.0**	**14.4**	**1.5**	**12.9**	**0.990**	**6,520**	**147**	0.422 U
		2/7/19	PES							**2.5**	**2.5**				
MW124	Valley Street ROW	12/26/13	SES	**160**	**5.96**	**1.22**	**0.730**	**–**	**1.46**	**0.390**	**1.07**	**0.125**	5 U	5 U	5 U
		4/13/18	PES	**162**	**4.47**	0.0227 U	**0.46 J**	**2.45**	**20.1**	**0.5**	**19.6**	**0.757**	**24.6**	0.296 U	0.422 U
MW128	Westlake Ave N ROW	3/29/17	PES	**387**	**15.9**	0.0227 U	0.0774 U	**4.84**	**10.5**	**1.8**	**8.7**	**0.227**	**12,600**	**13.2**	**64.8**
		6/21/17	PES	**1,050**	**24.6**	0.0227 U	0.0774 U	**7.81**	**23.0**	–	–	**0.704**	**19,600**	**33.4**	**45.1**
MW-133	Property	4/25/18	PES	**173**	**9.91**	**0.287**	**1.43 J**	**2.84**	**4.80**	**1.25**	**3.55**	**0.297**	**549**	**5.77**	**17.4**
MW-137	Property	4/12/18	PES	**213**	**109.0**	0.0227 R	**10.8**	**2.90**	**218**	**0.75**	**217**	**4.41**	**1,600**	0.296 U	**4.47**
MW-138	Dexter Ave N ROW	4/11/18	PES	**143**	**13.8**	0.0227 U	**45.9**	**4.89 J**	**21.5**	0.00	**21.5**	**0.725**	**83.1**	0.296 U	0.422 U
		1/3/19	PES	**125**	**14.1**	0.0227 U	**47.5**	**3.90**	**2.19**	0.00	**2.2**	**0.375**	**61.3**	**0.621 J**	**0.573 J**
MW-140	Roy Street ROW	4/12/18	PES	**249**	**15.5**	0.0227 R	**5.73**	**2.40**	**15.0**	**0.30**	**14.7**	**0.795**	**261**	0.296 U	0.422 U
MW-141	Property	4/12/18	PES	**179**	**9.64**	0.0227 R	**7.49**	**4.30**	**4.61**	–	–	**0.556**	**2,690**	**3.29**	**0.869 J**
MW-153	Roy Street ROW	5/1/18	PES	**148**	**24**	0.0227 U	**23.7**	**1.26**	**1.01**	–	–	**0.187**	**74.3**	0.296 U	0.422 U
		1/22/19	PES	**156**	**9.91**	0.0227 U	**13.2**	**1.92**	**3.01**	0.0	**3.0**	**0.299**	**387**	0.296 U	**4.89**

Table 15

Groundwater Monitored Natural Attenuation Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Alkalinity (mg $CaCO_3$/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TOC (mg/L)	Iron (mg/L)			Total Manganese (mg/L)	Dissolved Gases (µg/L)		
									Total	Ferrous	Ferric		Methane	Ethane	Ethene
MW-158A	8th Ave N ROW	4/30/18	PES	**345**	**113**	**0.446**	**278**	**54.8**	**55.4**	**0.50**	**54.9**	**1.04**	**352**	**15.7**	**11.0**
		1/24/19	PES	**329**	**29.7**	0.0227 U	**26.8**	**7.95**	**181**	0.0	**181**	**3.07**	**196**	**2.52**	**8.12**
MW-160	8th Ave N ROW	5/21/18	PES	**186**	**10.7**	**0.0703 J**	**2.68 J**	**1.47**	**12.3**	0.0	**12.3**	**0.400**	**129**	**14.5**	**4.75**
		1/25/19	PES	**134**	**10.7**	0.0227 U	**1.87 J**	**3.98**	**59.1**	**0.5**	**58.6**	**1.22**	**766**	**11.7**	0.422 U
MW-161	8th Ave N ROW	5/21/18	PES	**294**	**25.0**	0.0227 U	**13.5**	**1.49**	**9.37**	0.0	**9.4**	**0.758**	**53.4**	**2.64**	**0.979 J**
		1/25/19	PES	**282**	**25.5**	0.0227 UJ	**13.4**	**4.52**	**7.34**	0.0	**7.3**	**0.784**	**69.0**	0.296 U	0.422 U

NOTES:

1. mg/L = milligrams per liter
2. ug/L = micrograms per liter
3. $mgCaCO_3$/L= milligrams of calcium carbonate per liter
4. µS/cm = microSiemens per centimeter
5. mV = millivolts
6. ORP = oxidation-reduction potential
7. < = not detected at concentration
8. Ferric iron = total iron minus ferrous iron; if total iron < ferrous iron, ferric iron is reported as 0
9. PES = PES Environmental, Inc.
10. SES = SoundEarth Strategies, Inc.
11. Q = Sample was prepared and/or analyzed past recommended holding time.
12. V = The sample concentration is too high to evaluate accurate spike recoveries.

Table 16

2017 through 2019 Groundwater Field Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
Shallow Water-Bearing Zone									
F13	Property	3/27/17	6.80	756	15.4	3.4	0.86	-139	1.0
		6/22/17	7.00	865	20.2	–	0.27	-148	1.5
		4/5/18	6.84	491	16.6	–	0.50	67	–
F5	Property	3/28/17	6.05	1,001	10.9	5.8	0.99	-50.5	–
		6/22/17	6.38	1,080	19.5	–	0.80	-87.1	–
F9	Property	3/27/17	6.69	1,270	16.6	3.1	0.74	-151	–
		6/22/17	6.76	1,309	27.5	–	0.24	-149	–
G12	Property	3/27/17	7.34	1,296	20.7	–	0.41	150	1.25
		6/30/17	6.88	1,239	29.1	–	1.30	-87	–
J5	Property	3/21/17	6.95	251	15.1	4.6	0.70	-114	0.6
		6/26/17	6.94	484	19.8	–	0.42	-143	–
		4/5/18	6.85	286	14.1	–	0.50	77	–
J15	Property	3/27/17	7.42	935	14.1	–	0.48	141	2.0
		6/26/17	6.86	920	20.8	–	0.44	-99	1.5
		4/5/18	6.83	716	18.1	–	0.40	103	–
K8	Property	3/21/17	7.70	251	18.3	-0.3	0.80	-121	0.0
		6/26/17	7.76	257	22.3	–	0.25	-4	0.0
		4/5/18	9.45	220	16.7	–	0.70	56	–
M15	Property	3/27/17	7.16	1,544	18.7	–	0.60	140	2.75
		6/26/17	6.71	1,440	25.6	–	0.70	-84	–
		4/5/18	6.90	1,034	18.0	–	0.40	86	–
MW121	Property	12/26/13	6.89	1,610	–	–	4.16	-30	1.9
		3/28/17	6.63	2,608	14.4	2.9	0.99	-122	2.0
		6/20/17	8.29	2,437	19.9	–	0.52	-88	3.0
		4/5/18	6.64	2,028	17.2	–	0.60	120	–
		1/31/19	6.87	2,396	15.3	–	0.42	-3	–
MW125	Valley Street ROW	12/26/13	6.28	1,414	–	–	8.68	22	1.47
		3/22/17	6.62	1,296	14.6	3.7	1.00	-116	–
		6/28/17	6.71	984	17.1	–	1.91*	-101	–
		4/6/18	6.89	831	17.5	–	0.30	-68	–
		1/21/19	6.67	912	15.8	–	0.48	122	–
MW-154	Roy St ROW	4/30/18	7.26	469	16.3	–	0.40	72	–
		1/21/19	7.25	523	14.4	–	0.61	99	–
MW-155	Roy St ROW	4/27/18	6.79	479	13.3	–	3.20	94	–
		1/21/19	6.52	500	12.3	–	2.43	119	–
MW-159	8th Ave N ROW	4/26/18	6.92	928	18.9	–	0.70	109	–
		1/21/19	6.92	1,125	14.1	–	0.59	126	–
MW214 (dry)	Valley Street ROW	3/30/17	7.47	467	11.0	3.6	5.91	-70.1	–
		6/21/17	–	–	–	–	–	–	–
		4/9/18	8.94	380	13.7	–	8.00	401.2	–

Table 16

2017 through 2019 Groundwater Field Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
MW-8	800 Aloha Street Parcel	3/20/17	6.47	1,080	14.2	11.4	1.30	-4.0	–
(dry)		6/27/17	–	–	–	–	–	–	–
		4/13/18	5.99	540	13.1	–	0.80	261	–
MW-9	8th Ave N ROW	12/16/13	6.72	132	–	–	0.20	263	3.41
		3/20/17	6.64	1,203	13.0	0.0	1.00	-109	–
		6/20/17	6.41	1,391	20.8	–	0.76	-93	–
		4/5/18	6.73	1,299	13.4	–	0.80	128	–
		1/21/19	6.63	1,179	12.5	–	0.71	143	–
N7	Property	3/30/17	6.82	350	15.9	2.8	1.11	-73.8	0.0
		6/27/17	6.83	505	24.9	1.7	1.74*	-3.5	0.25
R-MW2	Property	3/21/17	7.00	723	11.4	17.6	0.80	-161	–
		6/15/17	6.78	766	15.5	–	0.43	-161	–
		4/2/18	6.68	737	14.5	–	0.70	49	–
R-MW3	Property	3/21/17	7.06	1,616	16.7	4.1	0.90	-38.7	–
		6/28/17	7.11	1,258	23.5	–	1.01	-131.6	–
		4/4/18	6.96	1,241	16.8	–	0.50	98.3	–
R-MW5	8th Ave N ROW	3/23/17	6.12	537	17.1	–	0.80	-36.6	1.0
		6/16/17	5.85	516	17.6	–	1.12	-370.4	–
		4/11/18	9.57[a]	504	15.5	–	0.50	213.2	–
		1/3/19	5.96	533	14.7	–	0.81	71.1	–
R-MW6	8th Ave N ROW	3/21/17	6.56	1,280	14.8	6.6	0.80	-38.5	–
		6/20/17	6.57	1,407	18.0	–	0.84	-55.5	1.5
		4/6/18	6.72	1,137	16.8	–	0.70	113.1	–
		1/25/19	6.75	1,055	14.9	–	0.33	-101.1	–
SCL-MW101	Alley Between	3/28/17	7.34	834	11.8	–	0.35	118	–
	8th & 9th Ave N	6/14/17	6.35	628	17.9	–	0.12	-49	–
		4/6/18	6.61	654	14.3	–	0.30	66	
SCL-MW105	Alley Between	3/28/17	7.19	1,049	12.6	–	0.50	136	–
	8th & 9th Ave N	6/15/17	6.45	1,086	15.8	–	1.11	-95	–
		4/6/18	6.73	968	15.4	–	0.40	76	–
SCS-2	800 Aloha Street Parcel	3/20/17	6.50	947	13.0	1.6	1.00	-142	–
		6/12/17	6.41	761	17.3	–	0.59	-31	–
		4/13/18	10.72[a]	199	10.5	–	0.80	215	–
SMW-3	Valley Street ROW	3/30/17	6.48	743	11.8	2.9	0.98	-85.7	–
		6/21/17	6.35	589	20.9	–	0.41	-57.3	–
		4/9/18	7.79[a]	807	14.9	–	0.60	-17.8	–
Intermediate "A" Water-Bearing Zone									
BB-8	Roy Street ROW	12/29/13	6.56	8,560	–	–	0.72	224	0.01
		3/22/17	6.74	621	14.6	-0.6	1.80	-22.9	0.0
		6/14/17	6.29	649	14.5	–	1.12	187.9	0.0
		4/11/18	6.96	512	14.5	–	0.70	84.9	0.0
		1/23/19	6.80	700	12.9	–	0.76	154.2	0.0

Table 16

2017 through 2019 Groundwater Field Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
GEI-1	Block 37	3/24/17	6.41	1,127	12.0	24.1	0.80	-103	1.0
		6/13/17	6.65	553	14.9	–	0.56	-38	–
MW107	8th Ave N ROW	12/16/13	6.62	900	–	–	1.14	22	0.43
		3/27/17	7.10	1,434	13.7	–	0.50	141	2.0
		6/19/17	6.24	1,434	22.5	–	0.77	-30	1.5
		4/9/18	6.73	1,193	18.4	–	0.30	49	4.0
		1/30/19	6.99	1,299	11.0	–	0.74	127	–
MW108	Alley Between 8th & 9th Ave N	12/17/13	6.36	1,570	–	–	0.50	-72	21.7
		3/28/17	6.65	1,410	13.6	2.0	0.97	-99	2.5
		6/27/17	6.72	1,252	16.3	–	4.45*	-108	2.0
		4/6/18	6.69	1,026	14.6	–	0.60	136	–
		1/22/19	6.77	1,053	11.9	–	0.80	132	–
MW109	Alley Between 8th & 9th Ave N	12/17/13	6.68	1,540	–	–	0.31	-78	16.2
		3/29/17	6.59	916	14.9	2.8	0.77	-115	1.5
		6/27/17	6.72	1,129	16.9	–	3.85*	-107	1.5
		4/6/18	6.71	1,112	14.3	–	0.50	136	–
		1/23/19	6.97	1,203	15.7	–	0.59	143	–
MW110	Alley Between 8th & 9th Ave N	12/19/13	8.82	888	–	–	0.52	291	0.04
		3/23/17	6.66	1,109	13.1	0.4	1.05	-46.5	0.1
		6/27/17	7.13	1,010	17.2	–	1.42*	56.7	0.0
		4/9/18	6.22	895	16.1	–	0.70	431.4	–
		1/23/19	6.74	1,020	14.5	–	0.41	103.2	–
MW115	9th Ave N ROW	12/19/13	6.80	1,220	–	–	0.71	-61	6.69
		3/22/17	7.28	880	14.8	–	0.51	160	1.5
		6/22/17	6.85	778	20.2	–	0.39	-102	1.5
		4/11/18	6.91	860	13.1	–	0.40	89	–
		1/30/19	7.03	912	12.7	–	0.57	116	–
MW116	9th Ave N ROW	12/19/13	6.84	498	–	–	0.67	75	2.65
		3/21/17	7.05	814	13.3	6.2	0.80	-127	3.9
		6/16/17	6.86	749	18.7	–	0.41	-641	1.8
		4/11/18	7.11	830	13.3	–	0.40	75	–
		1/30/19	7.09	771	15.5	–	0.65	-122	2.0
MW119	9th Ave N ROW	12/19/13	9.56	579	–	–	0.34	295	18.6
		3/29/17	6.41	631	13.4	2.4	0.85	-90.7	2.0
		6/28/17	6.29	676	17.4	–	4.88*	11.0	1.5
		4/5/18	6.30	517	13.1	–	0.60	119.1	–
		1/21/19	6.76	67	12.6	–	6.76	114.4	–
MW120	8th Ave N ROW	12/19/13	6.63	743	–	–	1.30	-13	0.17
		3/28/17	7.93	622	9.5	–	0.75	123	–
		6/28/17	6.60	568	17.8	–	1.33*	91	–
		4/9/18	6.96	423	15.1	–	0.40	37	0.00
		1/24/19	6.66	649	14.0	–	0.73	110	–

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2017 through 2019 Groundwater Field Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

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MW131	Property	3/27/17	7.01	2,045	19.5	2.4	0.85	-134	1.9
		6/20/17	15.39[a]	2,071	21.9	–	0.62	-86	–
		4/16/18	6.96	1,610	17.3	–	0.30	18	1.8
		10/25/18	6.66	1,546	18.9	–	0.39	-55	–
		12/12/18	6.78	1,899	14.5	–	0.44	129	–
		1/29/19	6.86	1,948	9.2	–	0.77	137	–
MW-142	8th Ave N ROW	4/27/18	6.96	1,349	18.9	–	0.50	133	1.50
		1/28/19	6.94	1,528	11.7	7.9	0.75	152	2.00
MW-144	8th Ave N ROW	4/27/18	7.34	1,739	16.4	–	0.40	100	0.50
		1/28/19	7.44	1,798	13.1	5.3	0.57	125	–
MW-146	Roy St ROW	4/30/18	7.27	694	17.0	–	0.40	95	1.25
		1/22/19	7.56	621	12.1	–	0.48	122	2.00
MW-149	Property	4/10/18	6.57	895	16.1	64.2[b]	0.70	201	1.8
		10/25/18	6.41	814	19.3	–	0.17	-31	–
		12/13/18	6.56	1,354	16.5	–	1.79	132	0.5
		1/29/19	6.67	1,209	17.1	2.9	17.05	121	0.0
MW-151	Property	4/10/18	6.69	809	15.1	23.5[b]	0.60	64	0.8
		10/25/18	6.26	3,599	18.5	–	0.06	-135	–
		12/14/18	6.74	2,314	11.0	–	0.13	-122	–
		1/31/19	6.86	2,151	13.0	–	0.18	21	–
MW-156	8th Ave N ROW	4/26/18	6.72	996	18.3	–	0.60	116	0.00
		1/24/19	6.70	1,263	16.1	78.1	0.54	131	0.00
Intermediate "B" Water-Bearing Zone									
MW111	Alley Between 8th & 9th Ave N	12/17/13	7.58	498	–	–	1.19	-99	0.18
		3/23/17	7.62	447	14.0	-0.5	1.19	-147	0.1
		6/14/17	7.29	431	19.7	–	1.15	-33	–
		4/6/18	7.75	605	15.3	–	0.60	83	–
		1/23/19	7.86	528	14.2	–	0.50	-124	–
MW112	Dexter Ave N ROW	12/26/13	7.79	378	–	–	2.58	223	0.23
		3/22/17	7.96	419	14.9	–	0.93	132	–
		6/16/17	7.11	49	22.0	–	5.22	-457	–
		4/12/18	7.07	41	14.8	–	1.10	35	0.00
		12/21/18	6.88	108	13.9	–	0.77	68	–
MW126	Alley Between 8th & 9th Ave N	3/28/17	7.41	397	12.8	2.0	1.37	-112	–
		6/15/17	7.69	385	15.9	–	0.70	-64	–
		4/6/18	7.87	353	14.3	–	0.30	99	–
		1/22/19	7.88	432	10.7	–	1.25	115	–
MW130	Property	3/29/17	7.18	751	9.6	–	2.66	132	1.0
		6/30/17	7.32	858	29.7	–	0.99	-70	0.0
		5/21/18	7.69	571	26.3	–	1.07	-72	0.0
		12/17/18	7.74	1,183	16.5	–	44.9	–	0.0
		1/31/19	7.40	1,176	21.4	–	59.05	112	0.0

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2017 through 2019 Groundwater Field Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

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MW-132	Property	9/25/17	8.52[a]	652	27.3	39.7[b]	0.70	-151.2	–
		4/26/18	7.70	466	25.9	–	3.50	81.6	–
		10/25/18	7.58	568	19.1	–	1.10	16.7	–
		12/13/18	7.60	668	14.2	–	0.93	117.0	–
		1/31/19	7.66	712	14.9	–	0.74	-40.3	–
MW-134	Property	9/22/17	13.08[a]	565	19.0	MAX[b]	0.91	-47.7	–
		4/16/18	7.10	598	15.7	–	0.10	-145.3	0.00
		10/25/18	7.41	748	18.3	–	0.30	157.3	–
		12/12/18	7.56	649	17.0	–	0.50	-140.7	–
		1/28/19	7.74	747	17.1	–	0.53	-140.6	–
MW-135	Property	9/25/17	9.11[a]	871	25.3	208[b]	1.10	-24.8	–
		4/25/18	7.38	837	19.5	–	0.80	99.2	1.50
		10/25/18	7.19	1034	17.6	–	0.77	-68.3	–
		12/13/18	7.41	1341	15.4	–	0.47	124.0	0.75
		1/31/19	7.34	1269	21.1	–	0.13	-157.4	–
MW-136	Property	9/25/17	10.07[a]	465	24.2	MAX[b]	0.60	-61.0	–
		4/16/18	7.94	447	21.9	–	0.40	-77.2	0.60
		10/29/18	7.57	521	20.8	–	0.62	10.6	–
		12/13/18	7.56	539	18.6	–	0.34	-149.0	–
		2/1/19	7.41	546	18.7	–	1.42	-53.6	–
MW-139	Property	9/25/17	9.65[a]	340	26.4	MAX[b]	0.60	-163	–
		4/25/18	7.79	432	20.3	–	0.40	89	0.75
		10/25/18	7.70	445	18.5	–	0.84	-13	–
		12/13/18	7.56	531	12.5	–	0.91	120	–
		1/28/19	7.92	534	13.4	–	1.19	-134	–
MW-143	8th Ave ROW	4/30/18	7.83	905	15.4	–	0.60	97	0.50
		1/29/19	7.64	950	18.1	80.4	0.23	-148	0.75
MW-145	8th Ave ROW	4/27/18	8.01	718	17.0	–	0.30	101	0.00
		1/29/19	7.60	740	17.4	94.9	0.98	-101	0.00
MW-147	Roy St ROW	5/1/18	7.85	911	16.8	–	0.40	79	–
		1/22/19	7.60	892	8.6	–	0.79	118	1.00
MW-148	Roy St ROW	5/1/18	8.06	499	13.7	–	0.40	107	0.25
		1/23/19	7.80	706	12.0	–	0.66	116	–
MW-150	Property	4/10/18	7.11	845	17.5	73.5[b]	0.60	315	0.00
		10/25/18	6.79	1,282	18.6	–	0.05	-114	–
		12/12/18	6.95	1,812	15.0	–	0.39	134	–
		1/29/19	6.88	1,959	15.8	–	0.15	123	–
MW-152	Property	4/10/18	7.45	846	15.2	15.8[b]	0.60	372	0.00
		10/26/18	6.83	894	17.0	–	0.62	-85	–
		12/14/18	6.47	1,207	14.5	–	0.75	116	1.00
		1/31/19	7.26	1632	11.6	–	9.10	125	–

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Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

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MW-157	8th Ave N ROW	4/26/18	6.92	867	20.7	–	0.70	97	–
		1/24/19	6.86	885	14.3	–	0.71	-64	3.00
W-MW-01	8th Ave N ROW	4/13/18	7.91	539	14.5	–	0.40	67	0.8
		10/29/18	7.50	565	16.6	–	0.67	-91	–
		12/13/18	7.36	583	17.9	–	0.34	-123	–
		1/25/19	7.46	703	12.4	MAX[(b)]	0.51	127	1.5
W-MW-02	8th Ave N ROW	12/16/13	7.05	999	–	–	0.30	-84	0.87
		3/27/17	6.53	1,239	17.8	–	0.41	135	1.75
		6/19/17	6.02	1,326	20.0	–	1.45*	-11	1.50
		6/12/18	6.80	1,594	16.1	–	0.75	23	3.40
		10/26/18	6.32	1,763	19.2	–	0.41	-63	–
		12/12/18	6.51	2,025	15.7	–	0.44	125	–
		1/25/19	6.49	1,687	16.9	25.2	0.53	-52	2.00
Deep Water-Bearing Zone									
FMW-129	SDOT Property S of Roy	4/10/17	8.88	891	12.4	–	0.82	-116	0.0
		6/23/17	6.82	703	20.2	–	0.60	-31	1.0
FMW-131	Block 37	3/24/17	6.73	342	13.3	2.9	0.84	-41.6	0.5
		6/23/17	6.71	552	15.4	–	0.78	25.1	0.25
FMW-3D	Block 31	3/24/17	6.85	302	13.7	16.9	1.06	-74.7	–
		6/23/17	6.81	356	19.9	–	0.48	-16.5	–
GEI-2	Block 37	3/24/17	6.43	890	12.6	0.5	0.84	-77.6	0.25
		6/23/17	6.68	804	16.0	–	0.45	-80.0	1.0
MW102	Valley Street ROW	3/29/17	7.87	417	11.6	–	1.55	148	–
		6/15/17	7.89	292	16.8	–	0.69	-88	–
		4/25/18	7.89	297	19.5	–	0.40	66	1.00
		1/24/19	8.01	314	11.5	–	0.63	-124	0.00
MW103	Alley Between 8th & 9th Ave N	12/18/13	10.45	735	–	–	0.26	267	1.39
		3/23/17	7.49	799	13.4	–	0.91	155	0.25
		6/12/17	7.35	648	17.0	–	0.31	-88	1.75
		4/6/18	7.52	521	15.1	–	0.60	91	–
		1/23/19	9.60	359	13.8	–	0.55	126	–
MW104	8th Ave N ROW	12/17/13	8.49	591	–	–	0.48	245	5.03
		3/30/17	6.28	667	8.7	–	1.84	131	–
		6/30/17	7.70	383	25.5	–	0.23	-131	0.0
		4/9/18	8.47	425	20.9	–	0.20	33	0.3
		10/25/18	11.48	750	19.2	–	0.63	131	–
		12/13/18	9.33	334	19.6	–	0.20	-259	–
		2/1/19	9.65	153	20.2	MAX[(b)]	0.11	-205	0.0
MW105	Roy Street ROW	12/29/13	7.49	1,165	–	–	1.26	216	2.01
		4/21/17	7.47	785	17.1	105	2.34	-36.8	–
		6/12/17	7.37	734	17.1	–	0.70	-64.1	–
		4/11/18	9.48[(a)]	469	14.4	–	1.40	42.0	0.75
		1/23/19	7.66	570	13.4	–	0.67	107.1	–

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MW106	SDOT Property S of Roy	4/14/17	9.47	726	15.1	457	2.00	1.7	0.0
		6/30/17	7.69	566	19.7	–	0.40	-128.2	0.0
		5/4/18	7.91	482	16.0	–	0.50	100.1	0.0
MW113	9th Ave N ROW	12/19/13	10.0	267	–	–	0.26	264	0.03
		3/22/17	6.54	1,426	15.2	2.1	1.10	-79.1	4.0
		6/16/17	6.52	1,145	12.9	–	0.57	-5.7	1.5
		4/11/18	9.44[a]	946	15.0	–	0.60	62.5	–
		2/7/19	6.64	1,219	9.9	2.4	0.80	75.9	2.5
MW122	Alley Between 8th & 9th Ave N	3/28/17	7.89	519	13.5	–	0.64	109	–
		6/14/17	7.72	374	16.7	–	0.46	-69	–
		4/6/18	7.93	336	14.9	–	0.60	77	–
MW123	Westlake Ave N ROW	4/1/17	6.85	795	13.1	14.5	1.10	-117	–
		6/24/17	6.89	737	17.3	–	1.07	-89	–
		4/14/18	6.82	888	14.5	–	0.50	166	–
MW124	Valley Street ROW	12/26/13	7.84	285	–	–	1.43	217	0.39
		3/29/17	7.96	306	13.9	–	1.06	117	–
		6/15/17	7.64	292	16.5	–	0.50	9	–
		4/13/18	7.57	281	14.3	–	1.30	327	0.5
MW128	Westlake Ave N ROW	3/29/17	6.62	800	12.5	7.0	0.99	-88.0	1.80
		6/21/17	6.74	1588	17.8	–	0.56	-78.8	–
		4/9/18	7.57	850	17.9	–	0.40	-44.7	–
MW-133	Property	9/25/17	9.85[a]	372	24.0	–	0.80	-156.5	–
		4/25/18	7.79	344	21.7	–	0.30	-24.8	1.25
		10/26/18	8.16	403	19.6	–	0.71	125.0	–
		12/12/18	7.69	362	17.3	–	0.90	-74.1	–
		2/1/19	7.76	362	19.4	–	0.34	-163.3	–
MW-137	Property	9/25/17	9.22[a]	342	26.0	223[b]	0.60	-147.5	–
		4/12/18	9.29	386	22.1	–	0.10	-111.8	0.75
		10/26/18	7.54	469	24.2	–	8.74	140.8	–
		12/12/18	7.27	398	18.8	–	0.74	-116.6	–
		2/1/19	9.26	437	18.8	–	0.21	-170.8	–
MW-138	Dexter Ave N ROW	9/21/17	8.32[a]	390	18.1	MAX[b]	0.52	-331.3	–
		4/11/18	7.89	350	17.4	–	0.20	33.5	0.0
		10/29/18	7.43	346	16.5	–	0.38	121.9	–
		12/17/18	7.82	424	15.7	–	0.49	-145.0	–
		1/3/19	7.33	358	16.2		2.41	49.8	0.0
MW-140	Roy St ROW	9/22/17	7.99[a]	560	21.6	200[b]	0.73	-208.8	–
		4/12/18	7.74	421	14.0	–	0.30	49.6	0.3
MW-141	Property	9/22/17	9.90[a]	398	24.0	MAX[b]	0.40	-392.8	–
		4/12/18	7.39	337	20.9	–	0.20	37.9	–
		10/25/18	7.25	376	19.5	–	0.41	149.5	–
		12/12/18	7.20	339	17.0	–	0.92	-109.5	–
		1/30/19	7.35	411	20.5	–	0.28	-134.0	–

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MW-153	Roy St ROW	5/1/18	8.91	369	16.5	–	0.40	87.2	–
		1/22/19	8.91	391	15.2	–	0.67	93.5	0.0
MW-158	8th Ave N ROW	4/30/18	8.20	1,306	14.8	–	0.40	102.3	0.5
		1/24/19	7.91	707	13.8	MAX(b)	0.53	-164.1	0.0
MW-160	8th Ave N ROW	5/21/18	7.96	323	23.2	–	0.42	-246.5	0.0
		1/25/19	7.57	404	18.4	MAX(b)	0.40	94.8	0.5
MW-161	8th Ave N ROW	5/21/18	7.59	544	21.6	–	0.48	-152.6	0.0
		1/25/19	7.49	661	17.9	MAX(b)	0.61	99.2	0.0
MW-162	Property	2/5/19	7.68	541	12.7	7.5	0.29	109.6	–
MW-163	Property	2/5/19	7.67	394	15.5	4.5	3.73	-44.7	–
MW-164	Property	2/5/19	7.63	462	14.6	10.5	0.56	-35.4	–
Treatment Zone A Injection Wells									
IW-4A	Property	3/28/18	6.49	540	17.1	–	0.50	65	–
IW-7A	Property	4/2/18	7.07	1,096	15.7	–	0.60	122.7	–
IW-9A	Property	3/29/18	6.58	528	16.8	–	1.40	88	–
IW-18A	Property	3/30/18	6.47	928	17.7	–	0.50	117	–
		12/13/18	6.26	2199	17.0	–	1.11	–	
IW-22A	Property	4/2/18	6.96	1,005	18.6	–	0.60	92.5	–
IW-37A	Property	3/28/18	8.17	319	15.9	–	0.70	10	–
IW-38A	Property	12/14/18	6.60	1945	15.8	–	0.26	143.7	–
IW-41A	Property	4/10/18	8.12	364	17.4	–	0.30	58.7	–
IW-42A	Property	4/10/18	7.53	590	14.2	–	0.40	73	–
IW-45A	Property	4/4/18	7.18	573	13.3	–	0.70	68.7	–
IW-46A	Property	3/28/18	6.78	1564	14.7	–	0.50	89	–
IW-48A	Property	4/2/18	6.88	2,007	15.4	–	0.70	72.6	–
Treatment Zone B Injection Wells									
IW-3B	Property	3/28/18	6.65	669	16.0	–	0.70	66	–
IW-6B	Property	4/2/18	6.69	884	15.9	–	1.10	110.0	–
IW-8B	Property	3/30/18	7.66	471	13.6	–	0.80	111	–
IW-17B	Property	3/30/18	6.80	142	16.5	–	0.70	-6.3	–
		12/13/18	6.43	1,640	17.1	–	1.61	47.9	–
IW-21B	Property	4/2/18	7.01	1709	17.9	–	0.50	74	–
IW-22B	Property	4/25/18	7.09	693	19.4	–	0.60	98.1	–
IW-24B	Property	3/30/18	6.92	1279	17.8	–	0.70	72	–
IW-28B	Property	4/9/18	6.85(a)	1,028	20.4	–	0.40	-54.5	–
		12/14/18	6.55	2,448	18.1	–	0.55	128.9	–
IW-33B	Property	4/2/18	7.03	1425	16.7	–	0.70	87	–
IW-37B	Property	3/29/18	7.31	1,156	19.6	–	0.60	76.2	–

Table 16

2017 through 2019 Groundwater Field Parameters
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mv)	Ferrous Iron (mg/L)
IW-45B	Property	3/28/18	7.40	949	18.0	–	0.70	64	–
IW-47B	Property	4/10/18	7.52	1,080	20.6	–	0.30	70.3	–
IW-49B	Property	3/28/18	6.98	1551	15.6	–	0.60	88	–
IW-51B	Property	3/28/18	7.69	1,100	15.7	–	0.30	-151.3	–
Treatment Zone C Injection Wells									
IW-1C	Property	3/29/18	7.71	578	14.5	–	0.80	104	–
IW-4C	Property	4/26/18 12/14/18	7.91 6.37	725 3,590	17.8 18.5	– –	0.70 34.50	109.1 185.1	– –
IW-8C	Property	4/4/18	9.13	1062	15.8	–	2.10	79	–
IW-9C	Property	4/2/18	7.36	967	18.5	–	0.80	85.3	–
IW-13C	Property	4/25/18	7.68	754	20.7	–	0.70	91	–
IW-15C	Property	3/30/18 12/13/18	7.32 6.59	1,343 2,448	19.8 14.7	– –	0.30 22.06	1.9 138.3	– –
IW-19C	Property	3/29/18	7.59	1122	19.3	–	0.80	98	–
IW-20C	Property	3/30/18	7.49	751	19.7	–	0.40	50.5	–
Treatment Zone D Injection Wells									
IW-1D	Property	4/3/18 12/13/18	8.96 6.72	591 2188	20.4 13.1	– –	0.40 0.28	-228 -34	– –
IW-3D	Property	4/3/18	7.58	761	21.8	–	0.50	72.3	–
IW-4D	Property	3/29/18	8.42	407	13.8	–	0.90	90	–
IW-6D	Property	4/3/18 12/13/18	7.73 6.31	366 2,952	18.1 15.1	– –	0.40 34.30	14.3 247.3	–
IW-8D	Property	4/4/18	7.33	722	20.5	–	0.50	81	–
IW-9D	Property	4/4/18	7.63	505	18.5	–	5.50	85.7	–
IW-11D	Property	5/1/18	7.96	757	20.9	–	0.60	55.9	–

Notes:

1. – = not measured
2. [a] = pH meter not giving stable/reliable reading
3. [b] = Turbidity reading collected and read with a turbidmeter after water sample collection.
4. * =
5. MAX = Turbidity greater than instrument upper detection limit.

Table 17

Groundwater Natural Attenuation Screening
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Preliminary EPA Anaerobic Biodegradation Screening Score														Total Score	Avg Score
				Alk	Cl^-	NO_3^-	SO_4^{2-}	TOC	Fe^{2+}	CH_4	Ethane/ Ethene	pH	DO	ORP	TCE	cDCE	VC		
Shallow Water-Bearing Zone																			
F13	Property	3/27/17	PES	0	0	2	0	0	3	3	0	0	0	2	0	0	2	12	
		6/22/17	PES	1	2	2	2	0	3	3	0	0	3	2	0	0	2	20	16
J5	Property	3/21/17	PES	0	2	2	2	0	0	3	2	0	0	2	2	2	2	19	
		6/26/17	PES	0	2	2	2	0	0	3	2	0	3	2	2	2	2	22	21
J15	Property	3/27/17	PES	1	2	2	0	2	3	3	0	0	3	0	0	2	2	20	
		6/26/17	PES	1	2	2	0	0	3	3	0	0	3	1	0	2	2	19	20
K8	Property	3/21/17	PES	0	0	2	0	0	0	0	0	0	0	2	2	2	2	10	
		6/26/17	PES	0	2	2	0	0	0	0	0	0	3	1	2	2	0	12	11
M15	Property	3/27/17	PES	1	0	2	0	0	3	3	0	0	0	0	2	2	2	15	
		6/26/17	PES	1	0	2	0	0	0	3	0	0	0	1	2	2	2	13	14
MW121	8th Ave N ROW	12/26/13	SES	1	2	2	0	0	3	0	0	0	0	1	0	0	2	11	
		3/28/17	PES	1	2	2	0	0	3	0	0	0	0	2	0	2	2	14	
		6/20/17	PES	1	2	2	0	0	3	3	0	0	0	1	0	2	2	16	14
MW125	Valley Street ROW	12/26/13	SES	1	2	2	2	0	3	0	0	0	-3	1	0	0	0	8	8
MW-9	8th Ave N ROW	12/16/13	SES	0	0	2	2	0	3	0	0	0	3	0	0	2	2	14	14
N7	Property	3/30/17	PES	0	0	0	0	0	0	3	0	0	0	1	2	2	2	10	
		6/27/17	PES	0	0	0	0	0	0	3	0	0	0	1	2	2	2	10	10
R-MW5	Dexter Ave N ROW	3/23/17	PES	0	2	2	0	0	3	0	0	0	0	1	2	0	0	10	
		6/16/17	PES	0	2	2	0	0	0	0	0	0	0	2	0	0	0	6	8
R-MW6	8th Ave N ROW	3/21/17	PES	1	0	2	0	0	0	3	0	0	0	1	2	2	2	13	
		6/20/17	PES	1	0	2	0	0	3	3	2	0	0	1	2	2	2	18	16
Intermediate "A" Water-Bearing Zone																			
BB-8	Roy Street ROW	12/29/13	SES	0	2	0	0	0	0	0	0	0	0	0	2	2	0	6	
		3/22/17	PES	0	0	0	0	0	0	0	0	0	0	1	2	2	0	5	
		6/14/17	PES	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	
		4/11/18	PES	0	0	0	2	0	0	0	0		0	0	2	2	0	6	5
GEI-1	Block 37	3/24/17	PES	1	0	2	0	0	3	3	0	0	0	2	0	0	0	11	
		6/13/17	PES	0	2	2	0	0	0	3	0	0	0	1	0	0	0	8	10

Table 17

Groundwater Natural Attenuation Screening
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Preliminary EPA Anaerobic Biodegradation Screening Score														Total Score	Avg Score
				Alk	Cl^-	NO_3^-	SO_4^{2-}	TOC	Fe^{2+}	CH_4	Ethane/ Ethene	pH	DO	ORP	TCE	cDCE	VC		
MW107	8th Ave N ROW	12/16/13	SES	1	2	2	0	0	0	0	0	0	0	1	2	2	2	12	
		3/27/17	PES	1	2	2	2	2	3	0	0	0	3	0	2	2	2	21	
		6/19/17	PES	1	2	2	2	2	3	3	3	0	0	1	0	2	2	23	
		4/9/18	PES	1	2	2	2	2	3	3	2	0	3	1	2	2	2	27	21
MW108	Alley Between	12/17/13	SES	1	2	2	2	0	3	3	2	0	3	1	2	2	2	25	
	8th & 9th Ave N	3/28/17	PES	1	2	2	0	0	3	3	2	0	0	1	2	2	2	20	
		6/27/17	PES	1	2	2	0	0	3	3	2	0	0	2	2	2	2	21	22
MW109	Alley Between	12/17/13	SES	1	2	2	0	0	3	3	0	0	3	1	2	2	2	21	
	8th & 9th Ave N	3/29/17	PES	1	0	2	0	0	3	3	0	0	0	2	2	2	2	17	
		6/17/17	PES	1	2	2	0	0	3	3	0	0	0	2	2	2	2	19	19
MW110	Alley Between	12/19/13	SES	1	2	2	0	0	0	0	0	0	0	0	2	2	2	11	
	8th & 9th Ave N	3/23/17	PES	1	2	2	0	0	0	0	0	0	0	1	2	2	2	12	
		6/27/17	PES	1	2	2	0	0	0	0	2	0	0	0	2	2	2	13	12
MW114	SDOT S of Property	12/18/13	SES	0	2	2	0	0	0	0	0	0	0	1	2	2	2	11	11
MW115	9th Ave N ROW	12/19/13	SES	1	2	2	2	0	3	3	0	0	0	1	2	2	2	20	
		3/22/17	PES	1	2	2	0	0	3	0	0	0	0	0	2	2	2	14	
		6/22/17	PES	1	2	2	0	0	3	3	0	0	3	2	0	2	2	20	18
MW116	9th Ave N ROW	12/19/13	SES	0	2	2	2	0	3	3	0	0	0	0	0	0	0	12	
		3/21/17	PES	1	2	2	0	0	3	3	0	0	0	2	0	0	0	13	
		6/16/17	PES	1	2	2	2	0	3	3	0	0	3	2	0	0	0	18	14
MW117	Dexter Ave N ROW	12/18/13	SES	0	0	2	0	0	3	0	0	0	0	1	0	0	0	6	6
MW119	9th Ave N ROW	12/19/13	SES	0	2	2	2	0	3	3	0	-2	3	0	0	2	2	17	
		3/29/17	PES	0	2	2	2	0	3	3	0	0	0	1	2	2	0	17	
		6/28/17	PES	1	2	2	0	0	3	0	0	0	0	1	2	2	0	13	16
MW120	8th Ave N ROW	12/19/13	SES	0	2	2	0	0	0	0	0	0	0	1	2	2	2	11	
		4/9/18	PES	0	2	2	0	0	0	0	0	0	3	1	0	2	0	10	10
MW131	Property	3/27/17	PES	1	2	2	0	0	3	3	3	0	0	2	0	2	2	20	
		6/20/17	PES	1	2	2	0	0	0	3	3	0	0	1	0	2	2	16	
		4/16/18	PES	1	2	2	2	2	3	3	3	0	3	1	2	2	0	26	21
MW-142	8th Ave N ROW	4/27/18	PES	1	2	2	2	2	3	3	2	0	0	0	2	2	2	23	23
MW-144	8th Ave N ROW	4/27/18	PES	1	2	2	2	2	0	3	2	0	3	0	2	2	2	23	23
MW-146	Roy Street ROW	4/30/18	PES	1	2	2	0	0	3	3	2	0	3	0	2	2	2	22	22

Table 17

Groundwater Natural Attenuation Screening
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Preliminary EPA Anaerobic Biodegradation Screening Score														Total Score	Avg Score
				Alk	Cl^-	NO_3^-	SO_4^{2-}	TOC	Fe^{2+}	CH_4	Ethane/ Ethene	pH	DO	ORP	TCE	cDCE	VC		
MW-149	Property	4/10/18	PES	1	2	2	2	0	3	3	3	0	0	0	2	2	2	22	22
MW-151	Property	4/10/18	PES	1	2	2	2	2	0	3	2	0	0	0	2	2	2	20	20
MW-156	8th Ave N ROW	4/26/18	PES	1	2	2	0	0	0	3	2	0	0	0	2	2	2	16	16
Intermediate "B" Water-Bearing Zone																			
MW111	Alley Between	12/17/13	SES	0	2	2	2	0	0	0	0	0	0	1	0	2	2	11	
	8th & 9th Ave N	3/23/17	PES	0	2	2	2	0	0	0	0	0	0	2	0	2	2	12	
		6/14/17	PES	0	2	2	2	0	3	0	2	0	0	1	0	2	2	16	13
MW112	Dexter Ave N ROW	12/26/13	SES	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4	
		3/22/17	PES	0	0	2	0	0	3	0	0	0	0	0	0	0	0	5	
		6/16/17	PES	0	0	2	0	0	3	0	0	0	0	2	0	0	0	7	
		4/12/18	PES	1	0	0	2	0	0	0	0	0	0	1	0	0	0	4	5
MW130	Property	3/29/17	PES	0	2	2	2	0	3	3	2	0	0	0	2	2	2	20	
		6/30/17	PES	1	2	2	2	0	0	3	2	0	0	1	2	2	2	19	
		5/21/18	PES	0	2	0	2	0	0	3	2	0	0	1	2	2	2	16	18
MW-132	Property	4/26/18	PES	1	2	2	2	0	3	3	2	0	0	0	2	2	0	19	19
MW-134	Property	4/16/18	PES	0	2	2	2	0	0	3	2	0	3	2	0	2	2	20	20
MW-135	Property	4/25/18	PES	0	2	2	0	0	3	0	2	0	0	0	2	2	2	15	15
MW-136	Property	4/16/18	PES	0	2	2	2	0	0	3	0	0	3	1	2	2	2	19	19
MW-139	Property	4/25/18	PES	0	2	2	2	2	0	0	0	0	3	0	0	0	0	11	11
MW-143	8th Ave N ROW	4/30/18	PES	1	2	2	2	0	0	3	2	0	0	0	0	2	2	16	16
MW-145	8th Ave N ROW	4/27/18	PES	0	2	2	0	0	0	3	0	0	3	0	2	2	2	16	16
MW-147	Roy Street ROW	5/1/18	PES	0	2	2	0	2	3	3	2	0	3	0	2	2	2	23	23
MW-148	Roy Street ROW	5/1/18	PES	0	2	2	0	0	0	3	0	0	3	0	0	0	0	10	10
MW-152	Property	4/10/18	PES	0	2	2	2	0	0	3	2	0	0	0	2	0	2	15	15
MW-157	8th Ave N ROW	4/26/18	PES	0	2	2	2	0	3	0	0	0	0	0	2	2	2	15	15
W-MW-01	8th Ave N ROW	3/30/17	PES	0	2	2	0	0	0	0	0	0	0	0	0	2	2	8	
		6/19/17	PES	0	2	2	0	0	3	0	0	0	0	1	0	0	2	10	
		4/13/18	PES	0	2	2	0	0	0	3	0	0	3	0	2	2	2	16	11
W-MW-02	8th Ave N ROW	12/16/13	SES	0	2	2	0	0	0	0	0	0	3	1	2	2	2	14	
		3/27/17	PES	1	2	2	2	2	3	3	0	0	3	0	0	2	2	22	
		6/19/17	PES	1	2	2	0	2	3	3	0	0	0	1	0	2	2	18	
		6/12/18	PES	1	2	2	2	2	3	3	2	0	0	1	0	2	2	22	19

Table 17

Groundwater Natural Attenuation Screening
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Preliminary EPA Anaerobic Biodegradation Screening Score															
				Alk	Cl^-	NO_3^-	SO_4^{2-}	TOC	Fe^{2+}	CH_4	Ethane/ Ethene	pH	DO	ORP	TCE	cDCE	VC	Total Score	Avg Score
Deep Water-Bearing Zone																			
FMW-129	SDOT S of Property	4/10/17	PES	0	2	2	0	0	0	0	2	0	0	2	2	2	0	12	
		6/23/17	PES	0	2	2	0	0	0	0	2	0	0	1	2	2	2	13	13
FMW-131	Block 37	3/24/17	PES	0	0	2	2	0	0	0	0	0	0	1	0	2	0	7	
		6/23/17	PES	0	2	2	0	0	0	0	0	0	0	1	0	2	0	7	7
GEI-2	Block 37	3/24/17	PES	1	2	2	0	0	0	0	0	0	0	1	0	2	2	10	
		6/23/17	PES	1	2	2	0	0	0	3	2	0	3	1	0	2	2	18	14
MW102		4/25/18	PES	0	0	2	2	0	3	0	0	0	3	0	0	0	0	10	10
MW103	Alley Between	12/18/13	SES	1	2	2	2	0	3	0	2	-2	3	0	2	2	2	19	
	8th & 9th Ave N	3/23/17	PES	1	2	2	0	0	0	0	3	0	0	0	2	2	2	14	
		6/14/17	PES	1	2	2	0	0	0	3	3	0	3	1	2	2	2	21	18
MW104	8th Ave N ROW	12/17/13	SES	0	2	2	0	0	3	0	0	0	3	0	0	2	0	12	
		3/30/17	PES	0	2	2	2	0	3	0	0	0	0	0	0	2	0	11	
		6/30/17	PES	0	0	2	2	0	0	0	0	0	3	2	2	2	0	13	
		4/9/18	PES	0	2	2	2	0	0	0	0	0	3	1	2	2	2	16	13
MW105	Roy Street ROW	12/29/13	SES	1	2	2	0	0	3	0	0	0	0	0	0	0	2	10	
		4/11/18	PES	0	2	2	2	0	0	3	0	-2	0	1	0	2	2	12	11
MW106	SDOT Property	4/14/17	PES	0	2	2	2	0	0	0	0	-2	0	1	0	0	0	5	
	S of Roy	6/30/17	PES	0	2	2	2	0	0	0	0	0	3	2	0	0	0	11	
		5/4/18	PES	0	2	2	2	0	0	0	0	0	0	0	0	0	0	6	7
MW113	9th Ave N ROW	12/19/13	SES	0	2	2	2	0	0	0	0	-2	3	0	2	2	2	13	
		3/22/17	PES	1	2	2	0	2	3	0	0	0	0	1	2	2	2	17	
		6/16/17	PES	1	2	2	0	0	3	3	3	0	0	1	2	2	2	21	17
MW124	Valley Street ROW	12/26/13	SES	0	0	0	2	0	0	0	0	0	0	0	2	2	0	6	
		4/13/18	PES	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	5
MW128	Westlake Ave N	3/29/17	PES	1	2	2	0	0	3	3	2	0	0	1	0	2	2	18	
	ROW	6/21/17	PES	1	2	2	0	0	0	3	2	0	0	1	0	2	2	15	17
MW-133	Property	4/25/18	PES	0	0	2	2	0	3	3	0	0	3	1	2	2	2	20	20
MW-137	Property	4/12/18	PES	0	2	2	2	0	0	3	0	-2	3	2	0	2	2	16	16
MW-138	Dexter Ave N ROW	4/11/18	PES	0	2	2	0	0	0	0	0	0	3	1	0	0	0	8	8
MW-140	Roy Street ROW	4/12/18	PES	0	2	2	2	0	0	0	0	0	3	1	2	2	2	16	16
MW-141	Property	4/12/18	PES	0	0	2	2	0	3	3	0	0	3	1	2	2	2	20	20

Table 17

Groundwater Natural Attenuation Screening
700 Dexter Avenue North, Seattle, Washington

Sample Location	Property	Sample Date	Sampled By	Preliminary EPA Anaerobic Biodegradation Screening Score															
				Alk	Cl^-	NO_3^-	SO_4^{2-}	TOC	Fe^{2+}	CH_4	Ethane/ Ethene	pH	DO	ORP	TCE	cDCE	VC	Total Score	Avg Score
MW-153	Roy Street ROW	5/1/18	PES	0	2	2	0	0	3	0	0	0	3	0	0	2	2	14	14
MW-158A	8th Ave N ROW	4/30/18	PES	1	2	2	0	2	0	0	2	0	3	0	2	2	2	18	18
MW-160	8th Ave N ROW	5/21/18	PES	0	0	2	2	0	0	0	2	0	3	2	2	2	0	15	15
MW-161	8th Ave N ROW	5/21/18	PES	0	2	2	2	0	0	0	0	0	3	2	2	2	0	15	15

NOTES:

1. EPA = US Environmental Protection Agency
2. Alk = alkalinity; Cl^- = chloride; NO_3^- = nitrate; SO_4^{2-} = sulfate; TOC = total organic carbon; Fe^{2+} = ferrous iron; DO = dissolved oxygen; ORP = oxidation/reduction potential
3. TCE = trichloroethene; cDCE = cis-1,2-dichloroethene; VC = vinyl chloride
4. Screening based on Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water (Publication EPA/600/R-98/128), September 1998.
5. Evaluation of total screening score:
   a. 0 - 5 Inadequate evidence for anaerobic biodegradation of CVO
   b. 6 - 14 Limited evidence for anaerobic biodegradation of CVOCs
   c. 15 - 20 Adequate evidence for anaerobic biodegradation of CVOCs
   d. >20 Strong evidence for anaerobic biodegradation of CVOCs
6. Avg Score = Average of total screening scores from 2017-2018.

Table 18

Soil Vapor Analytical Results
Former American Linen Supply
700 Dexter Avenue North Seattle, Washington

Sample Location	Sample Name	Sample Date	Analytical Results (micrograms per cubic meter)									
			PCE		TCE		cDCE		tDCE		VC	
MTCA Method B Soil Gas Screening Level			**321**		**12**		**–**		**–**		**9.3**	
SV01	SV01-20130311	03/05/13	**1.5**		0.16	U	**0.31**		0.58	U	**0.71**	
	SV01-092518	09/25/18	2.72	UJ	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-092518-D	09/25/18	**137**	**J**	2.14	U	1.59	U	1.59	U	1.02	U
	SV01-020619	02/06/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
SV02	SV02-20130311	03/05/13	**2.3**		0.17	U	0.12	U	0.61	U	0.04	U
	SV02-092518	09/25/18	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV02-020619	02/06/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
SV03	SV03-20130311	03/05/13	**4.6**		**0.39**		0.12	U	0.58	U	0.037	U
	SV03-092518	09/25/18	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U
	SV03-020619	02/06/19	2.72	U	2.14	U	1.59	U	1.59	U	1.02	U

Notes:

1. Laboratory analyses conducted by Air Toxics Ltd. of Folsom, CA (2013 samples) and Pace Analytical of Mount Juliet, TN (2018 samples)
2. VOCs analyzed by U.S. Environmental Protection Agency Method Modified TO-15 Low Level Analysis.
3. PCE = perchloroethylene (tetrachloroethene)
4. TCE = trichloroethene
5. cDCE = cis-1,2-dichloroethene
6. tDCE = trans-1,2-dichloroethene
7. VC = vinyl chloride
8. Detected results shown in bold, detections exceeding MTCA Method B sub-slab screening levels highlighted in gray
9. U = not detected at a concentration exceeding laboratory reporting limit
12. MTCA = Washington State Model Toxics Control Act
13. CLARC = cleanup levels and risk calculations
14. – = screening level not established

Table 19

RI/FS Exploration Locations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Well Number	Site Location	Approximate Water Bearing Zone	Estimated Well Screen Completion		Soil Samples Collected During Drilling		Soil Sample Analyses		Rationale
			Depth (ft bgs)	Elevation (ft)	Number	Rationale	VOCs	Other	
MW-301	Sidewalk on S side of Valley St between MW102 and MW124	Shallow	20 to 30	33 to 23	6	1/5 ft starting at 5 ft bgs	X	X	Located to provide additional shallow groundwater data between the Property and the parcel to the north of Valley Street
MW-302	Sidewalk (?) on E side of Dexter Ave N near MW-151	A	55 to 65	2 to -8	13	1/5 ft starting at 5 ft bgs	X	X	Located to confirm the extent of CVOCs in the Intermediate A Zone west of the source area beneath the former western boiler room
MW-303	Sidewalk (?) on E side of Dexter Ave N, NW of MW130	B	72 to 82	-15 to -25	0	samples will be collected in adjacent deeper boring	–	–	Located to confirm the extent of CVOCs in the Intermediate B Zone immediately west of the Property
MW-304	Sidewalk (?) on E side of Dexter Ave N, NW of MW130	Deep	105 to 115	-48 to -58	23	1/5 ft starting at 5 ft bgs	X	X	Located to confirm the extent of CVOCs in the Deep Zone immediately west of the Property adjacent to MW-303
MW-305	Sidewalk on W side of Dexter Ave N, S of Roy St	Shallow	25 to 35	30 to 20	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the extent of shallow CVOCs southwest of the Property
MW-306	Sidewalk on W side of Dexter Ave N, S of Roy St	A	45 to 55	10 to 0	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the extent of CVOCs in the Intermediate A Zone southwest of the Property
MW-307	Sidewalk on W side of Dexter Ave N, S of Roy St	B	75 to 85	-20 to -30	17	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the extent of CVOCs in the Intermediate B Zone southwest of the Property
MW-308	Alley between 8th Ave N and 9th Ave N, N side of MW122	A	35 to 45	-5 to -15	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the extent of CVOCs east of the screening level exceedances in MW120
MW-309	Alley between 8th Ave N and 9th Ave N, N side of MW122	B	65 to 75	-35 to -45	15	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the extent of CVOCs in the Intermediate B Zone northeast of the Property adjacent to MW-308
MW-310	Alley between 8th Ave N and 9th Ave N near MW108	Shallow	15 to 25	18 to 8	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the extent of shallow CVOCs east of the NE corner of the Property
MW-311	Alley between 8th Ave N and 9th Ave N near MW108	B	63 to 73	-30 to -40	15	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the extent of CVOCs in the Intermediate B Zone east of the NE corner of the Property and 30 feet below the elevation monitored by adjacent well MW108
MW-312	Alley between 8th Ave N and 9th Ave N near MW103	Shallow	15 to 25	21 to 11	5	1/5 ft starting at 5 ft bgs	X	X	Located to investigate shallow CVOCs east of the Property (in the alley) and adjacent to deeper monitoring wells
MW-313	Alley between 8th Ave N and 9th Ave N near MW110	Shallow	20 to 30	20 to 10	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate shallow CVOCs east of the southeast corner of the Property and adjacent to deeper monitoring wells
MW-314	Alley between 8th Ave N and 9th Ave N near MW110	B	70 to 80	-30 to -40	16	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the extent of CVOCs in the Intermediate B Zone east of the SE corner of the Property and 25 feet below the elevation monitored by adjacent well MW110
MW-315	Mercer St ROW, S of the Property	A	40 to 50	13 to 3	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the CVOC concentrations in the Intermediate A Zone south of the Property (south of former well MW114), screened at an elevation similar to BB-8
MW-316	Mercer St ROW, S of the Property	B	60 to 70	-15 to -25	14	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the extent of CVOCs exceeding the SL S of the Property (S of MW-147); well to be screened at an elevation similar to MW-147
MW-317	9th Ave N, north of MW116	A	35 to 45	-3 to -13	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the extent of CVOCs exceeding the SL NE of MW108, with the well screened at an elevation similar to MW108 and MW116
MW-318	9th Ave N, north of MW116	B	55 to 65	-23 to -33	0	samples will be collected in adjacent deeper boring	–	–	Located to confirm the CVOC concentrations in the Intermediate B Zone between near MW116, screened at an elevation between MW-317 and MW-319
MW-319	9th Ave N, north of MW116	Deep	70 to 80	-38 to -48	16	1/5 ft starting at 5 ft bgs	X	X	Located to confirm the CVOC concentrations in the Deep Zone near MW116, screened at an elevation similar to MW113, MW123, and FMW-129
MW-320	9th Ave N, next to MW113	Shallow	15 to 25	18 to 8	0	samples will be collected in adjacent deeper boring	–	–	Located to confirm the CVOC concentrations in the Shallow Zone between MW115 and MW116
MW-321	9th Ave N, next to MW113	A	40 to 50	-7 to -17	0	samples will be collected in adjacent deeper boring	–	–	Located to confirm the CVOC concentrations in the Intermediate A Zone between MW115 and MW116, screened at a similar elevation as MW108 and MW116
MW-322	9th Ave N, next to MW113	B	55 to 65	-22 to -32	0	samples will be collected in adjacent deeper boring	–	–	Located to confirm the CVOC concentrations in the Intermediate B Zone between MW115 and MW116, screened at an elevation between MW113 and MW-321

Table 19

RI/FS Exploration Locations
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Well Number	Site Location	Approximate Water Bearing Zone	Estimated Well Screen Completion		Soil Samples Collected During Drilling		Soil Sample Analyses		Rationale
			Depth (ft bgs)	Elevation (ft)	Number	Rationale	VOCs	Other	
MW-323	9th Ave N, adjacent to MW113	Deep	100 to 110	-67 to -77	22	1/5 ft starting at 5 ft bgs	X	X	Located to confirm the CVOC concentrations in the Deep Zone beneath MW113, screened similar to MW103
MW-324	9th Ave N, adjacent to MW115	Deep	70 to 80	-36 to -46	16	1/5 ft starting at 5 ft bgs	X	X	Located to confirm the CVOC concentrations in the Deep Zone near MW115, screened at an elevation similar to MW113, MW123, and FMW-129
MW-325	Mercer St ROW, west of 9th Ave N	A	40 to 50	3 to -7	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the CVOC concentrations in the Intermediate A Zone south of MW119, screened at an elevation similar to MW119
MW-326	Mercer St ROW, west of 9th Ave N, adjacent to MW169	Deep	90 to 100	-47 to -57	20	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the CVOC concentrations in the Deep Zone south of MW119, screened at an elevation similar to FMW-129
MW-327	E of Westlake Ave N near the S extent of Lake Union	A	30 to 40	-3 to -13	0	samples will be collected in adjacent deeper boring	–	–	Located to investigate the NE extent of CVOCs in the Intermediate A Zone near Lake Union, screened at an elevation similar to MW116
MW-328	E of Westlake Ave N near the S extent of Lake Union	Deep	65 to 75	-38 to -48	15	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the NE extent of CVOCs in the Deep Zone near Lake Union, screened at an elevation similar to MW113 and MW123
MW-329	SE corner of Valley St and Westlake Ave N, near MW128	Deep	100 to 110	-71 to -81	22	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the CVOC concentrations at the base of the Deep Zone near MW128, screened 40 feet below the elevation monitored by MW128
MW-330	N of the NE corner of Mercer St and Westlake Ave N	Deep	80 to 90	-51 to -61	18	1/5 ft starting at 5 ft bgs	X	X	Located to investigate the CVOC concentrations in the Deep Zone near the eastern extent of the plume, screened approximately 16 to 30 feet below the elevations of GEI-2 and FMW-131

Notes:

1. ft bgs = feet below ground surface, depths approximate for planned explorations
2. Elevation = feet relative to the North American Vertical Datum of 1988 (NAVD 88)
3. VOCs = volatile organic compounds
4. CVOCs = chlorinated VOCs
5. Other = physical and transport parameters (e.g., grain size, vertical K, bulk density, and/or foc).
7. Property = former American Linen Supply property
8. X = parameters analyzed
9. – = not applicable or not analyzed

Table 20

RI/FS Groundwater and Soil Vapor Monitoring Network
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well Number	Site Location	Screen Completion Depth (ft bgs)	Screen Completion Elevation (ft)	Continuous Water Level Monitoring	Analytical Parameters VOCs	GRO	MNA	Rationale
Existing Shallow Monitoring Wells								
FMW-143	9th Ave N ROW	23-28	10 to 5	–	X		X	Monitor groundwater east of the Property
MW-8	800 Aloha St Parcel	4.5-19	28.7 to 14.2	–	X			Monitor groundwater northeast of the Property
MW-9	8th Ave N ROW	7-22	33.8 to 18.8	–	X	X	X	Monitor groundwater northeast of the Property
MW121	8th Ave N ROW	15-25	26.7 to 16.7	–	X	X	X	Monitor groundwater east of the Property
MW125	Valley Street ROW	15-30	28.6 to 13.6	–	X	X	X	Monitor groundwater north of the Property
MW-154	Roy Street ROW	25-35	28.1 to 18.1	–	X	X	X	Monitor groundwater east of the Property
MW-155	Roy Street ROW	20-30	24.4 to 14.4	X	X	X	X	Monitor groundwater south of the Property
MW-159	8th Ave N ROW	20.4-30.4	22.9 to 12.9	–	X	X	X	Monitor groundwater south of the Property
MW-214	Valley Street ROW	7-17	20.8 to 10.8	–	X			Monitor groundwater east of the Property
R-MW5	Dexter Ave N ROW	15-30	42.0 to 27.0	–	X	X	X	Monitor groundwater west of the Property
R-MW6	8th Ave N ROW	12-22	33.3 to 23.3	–	X	X	X	Monitor CVOCs immediately east of the Property
SCL-MW101	Alley Between 8th & 9th Ave	5-15	25.5 to 15.5	–	X			Monitor groundwater northeast of the Property
SCL-MW105	Alley Between 8th & 9th Ave	20-30	11.3 to 1.3	–	X			Monitor groundwater northeast of the Property
SCS-2	Seattle City Light Parking Lot	11-21	28.2 to 18.2	–	X			Monitor groundwater northeast of the Property
SMW-3	Valley Street ROW	10-20	17.1 to 7.1	–	X			Monitor shallow groundwater near Lake Union
Proposed Shallow Monitoring Wells								
MW-301	Valley Street ROW near MW102	20-30	33 to 23	–	X	X	X	Investigate CVOCs on north side of the Property
MW-305	Dexter Ave N ROW, S of Roy St	20-30	30 to 20	–	X	X	X	Investigate extent of CVOCs SW of Property
MW-310	Alley near MW108	15-25	18 to 8	–	X		X	Investigate CVOCs northeast of the Property
MW-312	Alley near MW103	15-25	21 to 11	–	X		X	Investigate CVOCs east of the Property
MW-313	Alley near MW110	20-30	20 to 10	–	X		X	Investigate CVOCs east of the Property
MW-320	9th Ave N, near MW113	15-25	18 to 8	X	X		X	Investigate CVOCs between MW115/MW116
Existing Intermediate A Monitoring Wells								
BB-8	Roy Street ROW	30-40	13.7 to 3.7	–	X	X	X	Monitor groundwater east of the Property
FMW-142	9th Ave N ROW	38-43	-5 to -10	–	X		X	Monitor groundwater east of the Property
GEI-1	630 Westlake Ave N	26.8-36.8	1.2 to -8.8	–	X		X	Monitor groundwater east of the Property
MW107	8th Ave N ROW	35-45	8.8 to -1.2	–	X	X	X	Monitor groundwater east of the Property
MW108	Alley Between 8th & 9th Ave	40-50	-7.2 to -17.2	–	X		X	Monitor groundwater northeast of the Property
MW109	Alley Between 8th & 9th Ave	35-45	-0.0 to -10.0	X	X		X	Monitor groundwater east of the Property
MW110	Alley Between 8th & 9th Ave	35-45	4.7 to -5.3	–	X		X	Monitor groundwater east of the Property
MW115	9th Ave N ROW	35-45	-0.6 to -10.6	–	X		X	Monitor groundwater east of the Property
MW116	9th Ave N ROW	35-45	-3.0 to -13.0	–	X		X	Monitor groundwater east of the Property

Table 20

RI/FS Groundwater and Soil Vapor Monitoring Network
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well Number	Site Location	Screen Completion		Continuous Water Level Monitoring	Analytical Parameters			Rationale
		Depth (ft bgs)	Elevation (ft)		VOCs	GRO	MNA	
MW119	9th Ave N ROW S of Roy St	35-45	2.7 to -7.3	–	X		X	Monitor groundwater SE of the Property
MW120	8th Ave N ROW	40-50	-0.0 to -10.0	–	X	X	X	Monitor groundwater NE of the Property
MW-127	8th Ave N ROW	40-50	-1.0 to -11.0	–	X	X	X	Monitor groundwater NE of the Property
MW-142	8th Ave N ROW	40-50	2.4 to -7.6	–	X	X	X	Monitor groundwater east of the Property
MW-144	8th Ave N ROW	39.8-49.8	3.9 to -6.1	–	X	X	X	Monitor groundwater east of the Property
MW-146	Roy Street ROW	40-50	12.9 to 2.9	–	X	X	X	Monitor groundwater south of the Property
MW-156	8th Ave N ROW	39.6-49.6	2.0 to -8.0	–	X	X	X	Monitor groundwater east of the Property
Proposed Intermediate A Monitoring Wells								
MW-189	Valley Street ROW, next to MW102	48-58	1 to -9	–	X	X	X	Interim action well to monitor north side of Property
MW-302	Dexter Ave N ROW, W of MW-151	55-65	2 to -8	–	X	X	X	Investigate CVOCs on west side of the Property
MW-306	Dexter Ave N ROW, S of Roy St	45-55	10 to 0	X	X	X	X	Investigate extent of CVOCs SW of the Property
MW-308	Alley north of MW122	35-45	-5 to -15	X	X		X	Investigate extent of CVOCs NE of the Property
MW-315	Mercer St ROW, S of the Property	40-50	13 to 3	–	X		X	Investigate extent of CVOCs S of the Property
MW-317	9th Ave N, north of MW116	35-45	-3 to -13	–	X		X	Investigate NE extent of CVOCs
MW-321	9th Ave N, adjacent to MW113	40-50	-7 to -17	–	X		X	Not installed yet pending results of FMW-142
MW-325	Mercer St ROW, W of 9th Ave N	40-50	3 to -7	X	X		X	Investigate CVOCs between MW118/MW119
MW-327	E of Westlake Ave N near lake	30-40	-3 to -13	X	X		X	Investigate CVOCs in groundwater near lake
Existing Intermediate B Monitoring Wells								
FMW-141	Alley Between 8th & 9th Ave	48-58	-12 to -22	–	X		X	Monitor groundwater east of the Property
MW111	Alley Between 8th & 9th Ave	70-80	-33.5 to -43.5	–	X		X	Monitor groundwater east of the Property
MW112	Dexter Ave N ROW	75-85	-17.3 to -27.3	–	X	X	X	Monitor groundwater west of the Property
MW126	Alley Between 8th & 9th Ave	85-95	-54.1 to -64.1	X	X		X	Monitor groundwater NE of the Property
MW-143	8th Ave N ROW east of Property	70-80	-27.7 to -37.6	X	X	X	X	Monitor groundwater east of the Property
MW-145	8th Ave N ROW east of Property	70-80	-26.1 to -36.1	–	X	X	X	Monitor groundwater east of the Property
MW-147	Roy Street ROW south of Property	70-80	-17.6 to -27.6	–	X	X	X	Monitor groundwater south of the Property
MW-148	Roy Street ROW SE of Property	70-80	-25.7 to -35.7	–	X	X	X	Monitor groundwater south of the Property
MW-157	8th Ave N ROW east of Property	70-80	-28.3 to -38.3	–	X	X	X	Monitor groundwater east of the Property
W-MW-01	8th Ave N ROW east of Property	70-80	-25.2 to -35.2	–	X	X	X	Monitor groundwater east of the Property
W-MW-02	8th Ave N ROW east of Property	70-80	-26.5 to -36.5	–	X	X	X	Monitor groundwater east of the Property
Proposed Intermediate B Monitoring Wells								
MW-190	Valley Street ROW, next to MW102	78-88	-29 to -39	–	X	X	X	Interim action well to monitor north side of Property
MW-303	Dexter Ave N ROW, NW of MW130	72-82	-15 to -25	–	X	X	X	Investigate CVOCs on west side of the Property
MW-307	Dexter Ave N ROW, S of Roy St	75-85	-20 to -30	X	X	X	X	Investigate extent of CVOCs SW of the Property

Table 20

RI/FS Groundwater and Soil Vapor Monitoring Network
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well Number	Site Location	Screen Completion		Continuous Water Level Monitoring	Analytical Parameters			Rationale
		Depth (ft bgs)	Elevation (ft)		VOCs	GRO	MNA	
MW-309	Alley north of MW122	65-75	-35 to -45	–	X		X	Investigate extent of CVOCs NE of the Property
MW-311	Alley near MW108	63-73	-30 to -40	–	X		X	Investigate CVOCs northeast of the Property
MW-314	Alley near MW110	70-80	-30 to -40	–	X		X	Investigate CVOCs east of the Property
MW-316	Mercer St ROW, S of the Property	60-70	-15 to -25	X	X		X	Investigate extent of CVOCs S of the Property
MW-318	9th Ave N, north of MW116	55-65	-23 to -33	–	X		X	Investigate NE extent of CVOCs
MW-322	9th Ave N, adjacent to MW113	55-65	-22 to -32	X	X		X	Investigate CVOCs between MW115/MW116
Existing Deep Monitoring Wells								
FMW-129	SDOT property S of Roy St	84-89	-45.6 to -50.6	–	X		X	Monitor groundwater southeast of the Property
FMW-131	630 Westlake Ave N	63-73	-34.6 to -44.6	–	X		X	Monitor groundwater southeast of the Property
FMW-137	Mercer St N of 520 Westlake Ave N	70-80	-42 to -52	–	X		X	Monitor groundwater north of 520 Westlake Ave N
FMW-140	900 Roy Street	70-80	-35.5 to -46.5	–	X		X	Monitor groundwater east of the Property
GEI-2	630 Westlake Ave N	50.5-60.5	-21.1 to -31.1	–	X		X	Monitor groundwater southeast of the Property
MW102	Valley Street ROW	115-125	-65.8 to -75.8	–	X	X	X	Monitor groundwater north of the Property
MW103	Alley Between 8th & 9th Ave	103.5-113.5	-67.6 to -77.6	–	X		X	Monitor groundwater east of the Property
MW104	8th Ave N ROW	119-129	-76.3 to -86.3	–	X	X	X	Monitor groundwater east of the Property
MW105	Roy Street ROW	130-140	-85.3 to -95.3	–	X	X	X	Monitor groundwater southeast of the Property
MW106	West of Roy St	130-140	-78.0 to -88.0	–	X	X	X	Monitor groundwater south of the Property
MW113	9th Ave N ROW	70-80	-36.8 to -46.8	–	X		X	Monitor groundwater east of the Property
MW122	Alley Between 8th & 9th Ave	105-119	-75.0 to -85.0	–	X		X	Monitor groundwater northeast of the Property
MW123	Westlake Ave N ROW	70-80	-42.5 to -52.5	–	X		X	Monitor groundwater northeast of the Property
MW124	Valley Street ROW	110-120	-53.8 to -63.8	X	X	X	X	Monitor groundwater north of the Property
MW128	Westlake Ave N ROW	60-70	-30.8 to -40.8	–	X		X	Monitor groundwater east of the Property
MW-138	Dexter Ave N ROW	105-115	-47.5 to -57.5	–	X	X	X	Monitor groundwater west of the Property
MW-153	Roy St ROW W of MW106	120-130	-65.3 to -75.3	X	X	X	X	Monitor groundwater south of the Property
MW-158A	8th Ave N, near MW-9	90-100	-47.2 to -58.5	–	X	X	X	Monitor groundwater northeast of the Property
MW-160	8th Ave N, N of MW104	118-128	-76.5 to -86.5	X	X	X	X	Monitor groundwater east of the Property
MW-161	8th Ave N, S of MW107	120-130	-78.9 to -88.9	–	X	X	X	Monitor groundwater east of the Property
Proposed Deep Monitoring Wells								
MW-304	Dexter Ave N ROW, NW of MW130	105-115	-48 to -58	–	X	X	X	Investigate CVOCs on west side of the Property
MW-319	9th Ave N, north of MW116	70-80	-38 to -48	X	X		X	Investigate NE extent of CVOCs
MW-323	9th Ave N, adjacent to MW113	100-110	-67 to -77	–	X		X	Investigate CVOCs beneath MW113
MW-324	9th Ave N, adjacent to MW115	70-80	-36 to -46	X	X		X	Investigate CVOCs in groundwater near MW115
MW-326	Mercer St ROW, W of 9th Ave N	90-100	-47 to -57	X	X		X	Investigate CVOCs in groundwater S of MW119

Table 20

RI/FS Groundwater and Soil Vapor Monitoring Network
Former American Linen Supply
700 Dexter Avenue North, Seattle, Washington

Monitoring Well Number	Site Location	Screen Completion Depth (ft bgs)	Screen Completion Elevation (ft)	Continuous Water Level Monitoring	Analytical Parameters VOCs	Analytical Parameters GRO	Analytical Parameters MNA	Rationale
MW-328	E of Westlake Ave N near lake	65-75	-38 to -48	X	X		X	Investigate CVOCs in groundwater near lake
MW-329	Westlake Ave N ROW, near MW128	100-110	-71 to -81	–	X		X	Investigate CVOCs at base of deep GW zone
MW-330	Westlake Ave N ROW	80-90	-51 to -61	–	X		X	Investigate CVOCs in deep GW zone
Soil Vapor Probes								
SV01	8th Ave N, near MW121	11.75-12.25	30.8 to 30.3	–	X			Monitor CVOCs in soil vapor east of the Property
SV02	8th Ave N, near MW-159	11.25-11.75	32.0 to 31.5	–	X			Monitor CVOCs in soil vapor east of the Property
SV03	8th Ave N, south of MW-145	12.25-12.75	31.7 to 32.2	–	X			Monitor CVOCs in soil vapor east of the Property

Notes:

1. ft bgs = feet below ground surface, depths approximate for planned explorations
2. VOCs = volatile organic compounds
3. GRO = gasoline range organics
4. MNA = monitored natural attenuation parameters
5. Property = former American Linen Supply property
6. – = not conducted or not analyzed
7. X = parameters analyzed or well to be instrumented (instrumentation list preliminary and subject to change)

ILLUSTRATIONS

APPENDIX A

SELECTED SES DRAFT RI AND CAP PHOTOS, FIGURES, AND PLANS

APPENDIX B

BORING AND WELL LOGS FROM THE 2018 AND 2019 INVESTIGATIONS

APPENDIX C

TABLES SUMMARIZING INVESTIGATION RESULTS

APPENDIX D

HYDROGRAPHS

APPENDIX E

2018 AND 2019 ANALYTICAL DATA (DISC ONLY)

APPENDIX F

SAMPLING AND ANALYSIS PLAN